Volume 58, Number 3 Summer 2012 $4.95

Marin Medicine

The magazine of the Marin Medical Society

INTERVIEW

MMS President Irina deFischer, MD

FEATURE ARTICLES

Environmental Health

A former employee sued me for wrongful termination.

What do I do now?

You are not alone. Employment-related lawsuits are more common. What many physicians don't realize is that help is literally a phone call away. MMS members have access to a unique blend of risk management services and insurance specifically designed to assist physician groups in addressing these important employment issues. Among the features of the sponsored Employment Practices Liability program are:

- A Helpline staffed by experienced employment defense attorneys. Any manager, officer or principal of your practice has access to the Helpline for obtaining advice on handling workplace issues, including internal sexual harassment complaints, discipline and employee terminations.
- If a member seeks Helpline advice on an employee termination which later results in a claim, there is a 50% reduction of the member's EPLI deductible for that claim.
- Free, comprehensive criminal background checks for newly hired and promoted managers/supervisors.
- EEO compliance training for managers/supervisors. An internet-based training program, compliant with California law, provides supervisors with sexual harassment training.
- A low, minimum premium of $2,500 annually.
- Wage and Hour Defense Coverage.

For more information on these important benefits, and the special **MMS First-Time Buyers program,** please contact Marsh at **800-842-3761** or email us at CMACounty.Insurance@marsh.com.

Sponsored by:

MMS
MARIN MEDICAL SOCIETY

CMA
and 30 County Medical Associations and Societies

MARSH

59807 (6/12) ©Seabury & Smith, Inc. 2012 • 777 S. Figueroa St., Los Angeles, CA 90017 • www.CountyCMAMemberInsurance.com • CMACounty.Insurance@marsh.com
d/b/a in CA Seabury & Smith Insurance Program Management • CA Ins. Lic. #SL0633005 • AR Ins. Lic. #245544 • 800-842-3761

Volume 58 Number 3 Summer 2012

Marin Medicine

The magazine of the Marin Medical Society

FEATURE ARTICLES

Environmental Health

5 INTRODUCTION
A World of Toxic Threats
"You are what you eat—and drink, and breathe, and otherwise absorb. That is one of the underlying themes of this issue of *Marin Medicine*, which investigates environmental health."
Steve Osborn

7 CT SCANS
Reducing Radiation Risk from Medical Imaging
"Patients want to know if radiation from mammograms, x-rays and computed tomography will increase their risk of developing cancer."
Marc Gelman, MD, and Prasad Murthy, MD

11 NEUROBEHAVIORAL DISORDERS
Childhood Exposure to Environmental Toxins
"Parents are onto something: exposure to toxic substances does play a role in our children's health."
Alice Brock-Utne, MD

15 CHEMICAL CONTAMINATION
Is our tap water safe to drink?
"How clean and safe is the water coming out of the taps in homes and businesses today? Critics say that we don't really know if our water is safe, and that we could do a better job of finding out."
Jason Eberhart-Phillips, MD, MPH

18 DEADLY GASES
Respiratory Consequences of Air Pollution
"The combustion of flammable substrates, so vital for our economy, leads to the elaboration of a host of different gases into the atmosphere, with far-reaching climate and health-related outcomes."
Sridhar Prasad, MD

20 WOOD SMOKE POLLUTION
A Different Kind of Secondhand Smoke
"While most Americans are aware of the risks posed by secondhand tobacco smoke, we rarely think of our fireplaces, woodstoves, and outdoor fire pits and chimneys as hazards to our health."
Ina Gotlieb, MA

Table of contents continues on page 2. Cover photo by Duncan Garrett.

Marin Medicine

Editorial Board
Irina deFischer, MD, chair
Peter Bretan, MD
Georgianna Farren, MD
Lori Selleck, MD

Editor
Steve Osborn

Publisher
Cynthia Melody

Production
Linda McLaughlin

Advertising
Erika Goodwin

Marin Medicine (ISSN 1941-1835) is the official quarterly magazine of the Marin Medical Society, 2901 Cleveland Ave. #202, Santa Rosa, CA 95403. Periodicals postage paid at Santa Rosa, CA.
POSTMASTER: Send address changes to *Marin Medicine*, 2901 Cleveland Ave. #202, Santa Rosa, CA 95403.

Opinions expressed by authors are their own, and not necessarily those of *Marin Medicine* or the medical society. The magazine reserves the right to edit or withhold advertisements. Publication of an advertisement does not represent endorsement by the medical association.

E-mail: sosborn@scma.org

The subscription rate is $19.80 per year (four quarterly issues). For advertising rates and information, contact Erika Goodwin at 707-548-6491 or visit marinmedicalsociety.org/magazine.

Printed on recycled paper.

© 2012 Marin Medical Society

Marin Medicine

The magazine of the Marin Medical Society

DEPARTMENTS

22 **INTERVIEW**
MMS President Irina deFischer, MD
"The main thing we do is to advocate for physicians and patients at the local, state and national levels. We provide a venue and forum for physicians to get together and network; to socialize and get to know each other; and also to take their issues forward in the form of CMA policy and legislation."
Steve Osborn

25 **PRACTICAL CONCERNS**
The Marin-Sonoma-Napa ACO
"The Marin-Sonoma IPA is currently applying to be an accountable care organization, and we expect to know before the end of the year if our application has been accepted."
Mark Wexman, MD

27 **MEDICAL ARTS**
Introduction to "Like a Tree"
"It never occurred to me that by a vote of a homeowners association this beautiful tree that was here before any houses went up and was in its prime could be cut down because a neighbor wanted it down and could mobilize the necessary votes."
Jean Bolen, MD

30 **OUTSIDE THE OFFICE**
From Columbus to Carneros
"My interest in winemaking stems from my interest in moving to California from cold and blustery Columbus, Ohio."
Miguel Delgado, MD

33 **CURRENT BOOKS**
Fact-Driven Autobiography
"*Becoming Dr. Q* illustrates the dangers of becoming too literal and fact-driven and missing the greater insight of becoming a person and a physician."
Anne Cummings, MD

36 **HOSPITAL/CLINIC UPDATE**
Kaiser Permanente San Rafael
"Kaiser Permanente San Rafael is beginning construction in late summer of our new emergency department, with completion scheduled for fall 2013."
Gary Mizono, MD

34 **NEW MEMBERS**

MMS
MARIN MEDICAL SOCIETY

Our Mission: To support Marin County physicians and their efforts to enhance the health of the community.

Officers

President
Irina deFischer, MD

President-Elect
Georgianna Farren, MD

Past President
Peter Bretan, MD

Secretary/Treasurer
Anne Cummings, MD

Board of Directors
Michael Kwok, MD
Scott Levy, MD
Lori Selleck, MD
Jeffrey Stevenson, MD
Paul Wasserstein, MD

Staff

Executive Director
Cynthia Melody

Communications Director
Steve Osborn

Executive Assistant
Rachel Pandolfi

Membership

Active: 366
Retired: 90

Address

Marin Medical Society
2901 Cleveland Ave. #202
Santa Rosa, CA 95403
415-924-3891
Fax 415-924-2749
mms@marinmedicalsociety.org

www.marinmedicalsociety.org

YOUR ARTERIES AND VEINS WORK TOGETHER TO PROVIDE VITAL BLOOD FLOW.

SO DOES OUR MULTIDISCIPLINARY VASCULAR TEAM.

Vascular disease is incredibly common. Fortunately, our team is uncommonly qualified. They take a unique, multidisciplinary approach to treating many circulatory problems resulting from vein and artery disorders.

We diagnose and treat vascular issues, from ailments like varicose veins to more complex, life-threatening problems like gangrene and aortic aneurysms. Our vascular surgeons are board-certified and have specialty training in both open and endovascular techniques, so we can help provide a highly individualized approach to every patient's treatment, whether it's open surgery, minimally invasive catheter-based surgery, or a hybrid combination of both.

Patients benefit from a team-based approach to care. Our vascular surgeons work in concert with specialists in interventional radiology, interventional cardiology, wound care, infectious disease, plastic surgery, and podiatry. This depth and breadth is the lifeblood of our program's success, and the reason you can count on us for Marin's most comprehensive, collaborative vascular care.

EXPERT CARE FOR VASCULAR ISSUES:

- Varicose Veins
- Peripheral Artery Disease (PAD/PVD)
- Wound Care and Limb Salvage
- Carotid Artery Disease
- Aneurysms
- Deep Vein Thrombosis (DVT)

Call 1-888-996-9644 for a referral to a member of our vascular team.

MARIN GENERAL HOSPITAL

1-888-99-MY-MGH
(1-888-996-9644)

OUR HOME. OUR HEALTH. OUR HOSPITAL.

Expanding your expertise with ours.

When you refer your patients to John Muir Health, you can be confident they will receive exceptional care from a dedicated team of experts. Our highly experienced medical specialists provide a comprehensive, multidisciplinary approach that offers a continuum of clinical expertise across a full range of services.

- Behavioral Health Center
- Cancer Institute
- Cardiovascular Institute
- High-Risk OB
- Inpatient Rehabilitation Services
- Level III NICU
- Level II Trauma Center
- Neurosciences Institute
- Orthopedics Institute
- Pediatrics
- Surgical Services
- Weight-Loss Surgery

JOHN MUIR HEALTH

John Muir Medical Centers,
Concord and Walnut Creek, California

johnmuirhealth.com

A World of Toxic Threats

Steve Osborn

You are what you eat—and drink, and breathe, and otherwise absorb. That is one of the underlying themes of this issue of *Marin Medicine,* which investigates environmental health. Physicians as diverse as internists, radiologists, pediatricians, public health officers and pulmonologists address the environmental risks within their particular area of expertise, emerging with a composite portrait of a world filled with human-made dangers to human health.

Dr. Sridhar Prasad, a pulmonologist at Kaiser San Rafael, identifies the major pollutants in the air we breathe and then details their respiratory consequences, which include asthma, lung cancer, heart disease, and death. "The combustion of flammable substrates, so vital for our economy," he writes, "leads to the elaboration of a host of different gases into the atmosphere, with far-reaching climate and health-related outcomes."

Cars and factories are often blamed for poor air quality, but readers might be surprised to learn that another main culprit resides in their living rooms, either as an open fireplace or a wood-burning stove. Ina Gotlieb, the program director of Families for Clean Air, notes that wood smoke is just as toxic as diesel exhaust or tobacco smoke, and that it accounts for up to half the wintertime particulate pollution in the Bay Area. Factory exhaust may be difficult to regulate, but this version is well within the individual homeowner's control.

Wood smoke pollution coming out of a chimney is clearly visible, but contaminants in our drinking water are harder to see. That clear water running from your tap could contain one or more of the hundreds of chemicals known to cause cancer and other diseases. A key problem, according to Dr. Jason Eberhart-Phillips, the former public health officer for Marin County, is that we don't know much more than "could contain" because so many of these chemicals are unregulated and unmeasured. Of the tens of thousands of chemicals released into the environment, he observes, the EPA regulates only 91.

Chemicals may also be the culprit for the recent dramatic rise in neurobehavioral disorders, writes Dr. Alice Brock-Utne, a pediatrician who used to work for Marin Community Clinics. She recommends that parents reduce their children's exposure to these environmental toxins by watching what their family eats, avoiding insecticides and herbicides, advocating against flame retardants, spending time outdoors and staying vigilant against toxic threats.

Ironically, medicine itself is the source of another toxic threat, in the form of medical imaging. Despite their obvious benefits, x-rays, mammmograms and particularly CT scans can increase the risk of cancer. Drs. Marc Gelman and Prasad Murthy, an internist and radiologist at Kaiser San Rafael, describe the scope of the problem and offer specific suggestions for reducing radiation risk, from using alternative tests to tracking each patient's total radiation exposure.

Environmental concerns are also evident in the interview with new MMS President Dr. Irina deFischer, a family physician who lives in Marin and works at Kaiser Petaluma. Among other topics, she discusses the role of organized medicine in promoting healthy eating and creating pedestrian-friendly environments.

The interview touches as well on the continuing growth of physician groups. One of those groups, the Marin-Sonoma IPA, has been much in the news of late, as they expand northward into Sonoma County. Larkspur cardiologist Dr. Mark Wexman, chairman of their board, describes the next expansion—an accountable care organization (ACO) that they hope to form with local hospitals. A key element of the Affordable Care Act, ACOs may be the wave of the future.

Marin County has long been home to gifted physician writers, including Mill Valley psychiatrist Dr. Jean Shinoda Bolen. Her latest book is *Like a Tree,* an homage to a Monterey pine that used to grace her neighborhood before the homeowner's association cut it down. As a "tree person," she uses the incident as a springboard for exploring the biology and beauty of trees.

Another local plant of interest is the ubiquitous grapevine. Dr. Miguel Delgado, a Novato plastic surgeon, describes his decades-long quest to create great wine, beginning in a storm drain behind his house and ending in a Carneros vineyard.

We close with a book review by Greenbrae internist Dr. Anne Cummings and a report on the new ED at Kaiser San Rafael by physician-in-chief Dr. Gary Mizono.

As always, we welcome your comments or article proposals. *Marin Medicine* is sent to every physician in Marin County, and there is much to report. ◇

Email: sosborn@scma.org

Mr. Osborn edits Marin Medicine.

“ As your MIEC Claims Representative, I will serve your professional liability needs with both steadfast advocacy and compassionate support.”
Senior Claims Representative
Michael Anderson

Service and Value

MIEC takes pride in both. For over 35 years, MIEC has been steadfast in our protection of California physicians. With conscientious Underwriting, excellent Claims management and hands-on Loss Prevention services, we've partnered with policyholders to keep premiums low.

Added value:

- Zero-profit carrier with low overhead
- Dividends with an average savings on 2012 premiums of 48.4%*
- New lower rates in California for 2012

For more information or to apply:

- www.miec.com
- Call 800.227.4527
- Email questions to underwriting@miec.com

* (On premiums at $1/3 million limits. Future dividends cannot be guaranteed.)

MIEC 6250 Claremont Avenue, Oakland, California 94618
800-227-4527 • www.miec.com MMS_newsletter_05.22.12

MIEC

Owned by the policyholders we protect.

Reducing Radiation Risk from Medical Imaging

Marc Gelman, MD, and Prasad Murthy, MD

Over the past few years, the media have brought a great deal of attention to radiation exposure from medical imaging and the associated risk for developing cancer. As a result there is now much greater awareness, among both physicians and patients, of the potential risks of medical imaging. Patients want to know if radiation from mammograms, x-rays and computed tomography (CT) will increase their risk of developing cancer. They have only to look at the Internet, sometimes obtaining information of questionable reliability that may create unfounded concerns and unnecessary stress. Clinicians often do not know how to address these concerns.

There is clearly a need for education in this area—for patients, clinicians and imaging professionals. This article looks at the extent of the problem, discusses steps clinicians can take to reduce imaging referrals, and highlights what Kaiser Permanente is doing to reduce radiation exposure and the need for CT scans.

Dr. Gelman is an internist at Kaiser San Rafael whose administrative duties include access oversight for the hospital's radiology department. Dr. Murthy, a radiologist at Kaiser San Rafael, serves on the Kaiser Northern California Regional CT Protocol Committee.

Scope of the problem

What exactly is the extent of the problem? A recent report found that the per capita dose of radiation from medical imaging in the United States has increased by a factor of nearly six since the early 1980s.[1] The report also noted that medical imaging was responsible for almost 50% of all radiation exposure by Americans, and that CT scans were responsible for half this total.

Another recent study found that the use of CT scans in hospital emergency rooms has boomed, rising 330% in 12 years.[2] About one in seven patients in the ER gets a CT scan, and a quarter of all CT scans are performed through the ER. A related significant issue is the rise of "incidentalomas" in imaging, defined as findings that are unrelated to the clinical indication for the exam performed. Further imaging evaluation of these incidentalomas (most of which are benign) adds significantly to the number of CT scans performed.

The effects of radiation are dependent on sex and age at the time of exposure, and the risks are additive over time. CT scans have been shown to increase the risk of three types of cancers: breast cancer in women (CTs of chests being presumably the worst because of direct breast exposure), lung cancer and leukemia. Young age at time of exposure is a significant risk factor, as there is more time for the biologic action of the ionizing radiation to cause damage. For example, a 5-year-old female child undergoing a CT scan for possible appendicitis has a 1:296 risk of lifetime cancer vs. a risk of only 1:5747 for an 80-year-old male undergoing the same scan.

Background radiation from cosmic, industrial and consumer sources accounts for 3 millisieverts (mSv) on average per person per year.[3] (The millisievert quantifies the biologic effects of ionizing radiation.) To put radiation from medical imaging in perspective, just one CT chest scan equals 10 mSv of radiation. Other scans that equal 10 mSv include one CT scan of the abdomen or pelvis; five CT head scans; 1/2 of a bone scan; 5/6 of a myocardial profusion scan; and 5/8 of a PET scan. These numbers indicate the scope of the problem—one that will escalate unless corrective actions are taken on multiple fronts.

Choose wisely

Referring clinicians can do several things to mitigate radiation exposure

and the need for CT scans. Two key recommendations are to (1) avoid ordering the test using ionizing radiation when feasible and (2) have the imaging center use protocols that minimize the dose of radiation.

Listed below are some specific guidelines drawn from multiple sources.[4,5]

Right upper quadrant (RUQ) pain. First consider the history and diagnostic labs. Ultrasound is the diagnostic imaging modality of choice, with higher sensitivity for biliary disease than CT. Transaminase and total bilirubin are good surrogate markers for obstruction that may not be seen on ultrasound.

Epigastric pain. Ultrasound is the best initial test for pancreatitis, though CT is more sensitive and specific after lab evaluation. A differential diagnosis needs to be considered to properly workup this symptom: consider dyspepsia, GERD, gall bladder disease, pancreatitis, myocardial infarction, pneumonia, pulmonary infarction and pleural effusions. Upper endoscopy is the test of choice if there are red flags suggesting gastric malignancy, which is generally seen in patients greater than age 50. Red flags include unintended weight loss, persistent vomiting, progressive dysphagia, odynophagia, unexplained anemia or iron deficiency, hematemesis, palpable abdominal mass or adenopathy, previous gastric surgery, or jaundice.

Lower abdominal pain/diarrhea. Abdominal pain associated with diarrhea of less than seven days can be managed expectantly with labs and stool tests as indicated. Symptoms lasting more than four weeks may require upper and lower endoscopy. Ileal pathology may present with both acute and chronic diarrhea. Lower abdominal pain in women requires a different approach to avoid pelvic radiation exposure, and it also begins with a differential diagnosis: consider pregnancy, adnexal cysts or masses with torsion or bleeding, endometriosis, and leiomyomas. Ultrasound is the preferred imaging test for a woman with a positive pregnancy and an uncertain diagnosis after labs and a positive physical examination.

Ongoing abdominal pain. For patients 50 years or older, ongoing abdominal pain can be evaluated with a single CT scan, not multiple scans. Check to make sure previous scans cannot be repurposed to answer a clinical question and avoid a repeat scan. Abdominal CT scanning for patients under age 50 should only be undertaken in the setting of red flags. Alternating diarrhea and constipation is reassuring. Symptoms of concern are fever, weight loss and chronic diarrhea. Physical exam and labs should be used. An unremarkable workup can be managed without further imaging. Testing should focus on a specific disease and not a general screen.

Vertigo. CT scanning for dizziness is not a good test, except for cerebellar hemorrhage, which only presents as isolated peripheral vestibular disease 10% of the time. Almost all vertigo symptoms (94%) are generated from peripheral disease. Physical examination may have more diagnostic accuracy than MRI imaging.

Headache. Don't image for uncomplicated headache (see American College of Radiology guidelines).[4]

Left lower quadrant pain and diarrhea. CT to confirm presumed acute diverticulitis is not routinely needed unless clinical sepsis is present or medical management is failing.

Chest nodules. CT chest scanning for nodules less than 4 mm (if not ground glass) in patients under 35 years old is low yield.[6]

Low back pain. Don't obtain imaging for nonspecific low back pain that cannot be attributed to a specific disease or spinal abnormality following a history and physical examination. HEDIS guidelines consider ordering such a test in patients 18–50 to be a non-quality indicator within 28 days of presentation of symptoms.

Appendicitis. Acute appendicitis in patients less than age 40 with typical history and physical examination can proceed to surgery without CT. Older patients can present with a more confusing history and physical examination.

Pulmonary embolism. Low clinical probability and negative D-dimer are sufficient to avoid the CT scan.

Minor head injuries. The Canadian CT Head Rule should be applied to patients who meet certain risk criteria for minor head injuries (see box).[7]

Canadian CT Head Rule

CT Head Rule is only required for patients with minor head injuries with any one of the following:

High risk (for neurological intervention)

- Glasgow Coma Score <15 at 2 hours after injury
- Suspected open or depressed skull fracture
- Any sign of basal skull fracture
- Vomiting (2 or more episodes)
- Age 65 years or older

Medium risk (for brain injury on CT)

- Amnesia before impact >30 min
- Dangerous mechanism (pedestrian struck by motor vehicle, occupant ejected from motor vehicle, fall from height >3 feet or five stairs)

Minor head injury is defined as witnessed loss of consciousness, definite amnesia, or witnessed disorientation in patients with a GCS score of 13–15.

Image wisely

Awareness of the dangers of medical imaging has led to significant action in recent years, on multiple fronts. In 2010, the FDA launched a new Radiation Safety Initiative adopting two principles of radiation protection: (1) appropriate justification for each procedure ordered and (2) careful optimization of the radiation dose used during each procedure.[8]

The FDA initiative includes mandatory accreditation of CT scanners; appropriateness criteria for physician decision-making; creation of a national dose registry; and standardized reporting of medical imaging errors. Accreditation ensures that every CT scanner in use is optimized to achieve CT scan doses within specific recommended

ranges. Beginning in July, a new California law will require mandatory reporting of CT dose in the radiology report. The law also requires accreditation by July 2013 of all facilities that perform CT for diagnostic purposes. In addition, there are initiatives to establish a patient dose record that will track total radiation exposure and assist clinicians in the decision-making process.

The medical imaging community has been proactive in responding to the outcry about radiation risk and in making changes to reduce the risk. The American College of Radiology and the Radiological Society of North America joined forces to create a website, RadiologyInfo.org, which provides extensive resources to help patients understand the risks and benefits of imaging tests and procedures. A second major initiative is the Image Wisely campaign (imagewisely.org), which asks imaging professionals and referring clinicians to take a pledge to reduce the amount of radiation used in medically necessary imaging studies and to eliminate unnecessary procedures.

CT protocols at Kaiser

At Kaiser Permanente, our CT Protocol Optimization Committee overhauled our protocols two years ago with the specific goal of reducing radiation dose. Protocols have been optimized to take advantage of vendor-provided dose reduction techniques and current research. Our average doses for exams have decreased more than 25%, and new dose-reduction techniques promise to reduce doses even more without significantly compromising image quality.

More recently, our radiologists have been addressing the incidentaloma issue. We are conducting a multidisciplinary review of guidelines for reporting and managing incidentalomas, and we are distributing specific guidelines to our physicians for use in daily practice. The goal is to reduce the number of CT and other imaging exams performed to evaluate incidentalomas, most of which have a high likelihood of being benign. Such reductions will lessen overall radiation exposure, patient anxiety and health care costs.

We are starting to see results from our new protocols, but we can do much better in two specific areas. First, we need to move from fear to education. The recent talk of imaging-related radiation risk has scared patients and created a mistrust of medical imaging. Referring clinicians and imaging professionals must be prepared to have informed, realistic conversations with patients about the true relative risks (as opposed to the absolute risks, which can confuse patients) and benefits of imaging studies. When used judiciously, medical imaging—particularly CT scans—can be lifesaving and actually reduce overall health care costs.

Second, both referring clinicians and imaging professionals have to do a better job of communicating and working together to minimize unnecessary imaging. Common scenarios that need to be eliminated include (1) radiologists protocoling and performing exams without relevant history and (2) referring clinicians having to order follow-up exams "on their own" without appropriate direction from the radiologist.

It is encouraging to see the improving alignment of radiologist, clinicians, patient perception and public policy. We should be proud of the progress we have made over the past few years on this significant medical issue, but we cannot afford to lose momentum. ◇

Emails: marc.gelman@kp.org, prasad.murthy@kp.org

References

1. National Council on Radiation Protection and Measurements, "Ionizing radiation exposure of the population of the United States," NCRP Report No. 160 (2009).
2. Kocher KE, et al, "National trends in use of computed tomography in the emergency department," *Ann Emerg Med,* 58:452-262 (2011).
3. Stabin MG, "Doses from medical radiation sources," Health Physics Society website, hps.org (2011).
4. American College of Radiology, "Choosing wisely: Five things physicians and patients should question," choosingwisely.org (2012).
5. Penner RC, Majumdar S, "Approach to abdominal pain in adults," *UpToDate* (Jan 17, 2012).
6. Weinberger SE," Diagnostic evaluation and management of the solitary pulmonary nodule," *UpToDate* (August 2011).
7. Stiell IG, et al, "Canadian CT head rule for patients with minor head injury," *Lancet,* 357:1391-96 (2001).
8. U.S. Food & Drug Administration, "White paper: Initiative to reduce unnecessary radiation exposure from medical imaging," fda.gov (2010).

Additional Reading

Brenner DJ, Hall EJ, "Computed tomography—an increasing source of radiation exposure," *NEJM,* 357:2277-84 (2007).

Fazel R, et al, "Exposure to low-dose ionizing radiation from medical imaging procedures," *NEJM,* 361:849-857 (2009).

Hendee WR, et al, "Addressing overutilization in medical imaging," *Radiology,* 257:240-245 (2010).

Rabin RC, "Doctor panels recommend fewer tests for patients," *New York Times* (April 4, 2012).

PARK PLACE HEARING CENTER

Phyllis Burt, MA, CCC-A
Licensed Audiologist
& Hearing Aid Dispenser

COMPLETE HEARING SERVICES
Diagnostic Hearing Testing
Otoacoustic Emissions
Newborn Screening

COMPREHENSIVE HEARING AID EVALUATIONS
Conventional, Programmable
& Digital Hearing Aids
Service & Repair
Latest Technology

707-763-3161
47 Maria Drive, Suite 812
Petaluma, CA 94954
FAX#: 707-763-9829
www.parkplacehearing.net
pphc@sonic.net

2012 **Education Series**

California Medical Association

MARIN MEDICAL SOCIETY

CMA Center for Economic Services
Webinars At-A-Glance

Please note that this calendar does not include CMA's ICD-10 training courses to be offered in 2012.

June 13: CMA and the Courts/Accessing CMA's Legal Library
CMA Legal Department • 12:15 – 1:15 p.m.

June 20: Writing Effective Appeals
Mary Jean Sage • 12:15 – 1:15 p.m.

July 18: Preparing for a Medicare and/or Medi-Cal Audit
Mary Jean Sage • 12:15 – 1:15 p.m.

Aug. 1: Coding for Medical Necessity
Arthur Lurvey, M.D. • 12:15 – 1:15 p.m.

Aug. 15: Program Integrity in Medicare and Medi-Cal – The Physician's Role
Bruce Tarzy, M.D. • 12:15 – 1:15 p.m.

Sept. 5: A Guide to Reviewing Payor Contracts
Kris Marck • 12:15 – 1:15 p.m.

Sept. 19: Creating and Implementing Financial and Office Policies
Debra Phairas • 12:15 – 1:15 p.m.

Oct. 3: Protect Your Practice From Payor Abuse
Mark Lane • 12:15 – 1:15 p.m.

Oct. 17: Establishing Expectations for High Performance from Medical Staff
Debra Phairas • 12:15 – 1:15 p.m.

Nov. 7: Understanding ARC and CARC Revenue Codes
David Ginsberg • 12:15 – 1:15 p.m.

*Visit **www.cmanet.org/events** for forthcoming registration information.*
Webinars are FREE for CMA members, $99 for non-members.
Questions? CMA Member Help Center: 800.786.4262
*Please note: this calendar is subject to change. Visit **www.cmanet.org/events** for updates.*

Childhood Exposure to Environmental Toxins

Alice Brock-Utne, MD

In a familiar scene, a pediatrician spends a well-child visit tirelessly reassuring a mother that the benefits of vaccines outweigh the risks. The doctor's frustration grows as she tackles the mother's fears that her child will get autism or attention deficit hyperactivity disorder (ADHD). Soon the doctor is led down a path of trying to create a competing fear of vaccine-preventable diseases.

Frustration from these types of visits has led some doctors to recoil at the mention of vaccine refusal. It has even led some to ban patients who refuse vaccines. In other cases, doctors have stopped advocating for vaccines in order to serve a patient base convinced vaccines are too toxic. For parents, the vaccine debate has proven confusing and dangerous. Marin County now leads the way in low vaccination rates and outbreaks of pertussis and measles. Nonetheless, parents are onto something: exposure to toxic substances does play a role in our children's health.

In 2000, the National Research Council estimated that 3% of all neurobehavioral disorders were caused directly by toxic environmental exposures.[1] They also estimated that 25% of these disorders were caused by the interaction between environmental factors and inherited susceptibilities. Based on this research, a group of environmental medicine researchers recently published a list of the 10 chemicals most suspicious for developmental neurotoxicity.[2] The list was narrowed down from the 80,000 synthetic chemicals developed in the last 50 years; to the 3,000 chemicals with the greatest potential for human exposure; to the 200 chemicals detectable in virtually all Americans; and finally to the 10 most suspicious culprits in the rise of neurobehavioral disorders: lead, methyl mercury, polychlorinated biphenyls, organophosphate and organochlorine pesticides, endocrine disruptors, automotive exhaust, polycyclic aromatic hydrocarbons, brominated flame retardants, and perfluorinated compounds.

According to the CDC, 1.1% of American children had autism in 2008.[3] In 2000, that same statistic was 0.7%. Since autism is five times more prevalent in boys than girls, 1.9% of American boys are affected by the disorder. ADHD has similarly frightening statistics: a full 8% of American children now have ADHD, and 80% of those children are boys.[4] While overdiagnosis and changing diagnostic criteria partly explain the increased prevalence of these neurobehavioral disorders, they only account for a small bump, not the exponential rise we are seeing.[5] Beyond the statistics, the toll on families, schools, and our communities is tragic. At the front lines, our teachers, parents, caregivers and physicians are seeing children afflicted with neurobehavioral disorders in ever-increasing numbers. This is not good news for our children, especially our little boys.

The cocktail of environmental exposures that can affect our children's neurodevelopment begins preconception. Exposures to sperm, body burden in a preconception mother, and exposures during fetal life all contribute to a child's future risk of disease.[6] For a decade, the research community has been distracted by the question of whether vaccines could be the cause of the rising rates of neurobehavioral disorders. Could the thimerosal preservative in vaccines be to blame? No, we phased that out in the early 2000s and rates continued upward without a blip. Could it be we are overwhelming the young immune system with more vaccines than before? No, we used to give the pertussis vaccine as a whole-cell vaccine, thus subjecting the young immune systems of my generation to vastly more antigens.

Vaccines may be the best-monitored, most well-studied exposure in our children's lives. Vaccines have clear, measurable, important benefits. Sadly, by

Dr. Brock-Utne, a pediatric hospitalist for the Physician's Choice Medical Group, was formerly a pediatrician for Marin Community Clinics.

avoiding vaccines, parents are unlikely to have any positive impact on their child's neurodevelopment. Instead, they place their children and the immune-suppressed of our community at risk of serious infection. It is time to leave the scapegoat of vaccines behind. Instead, we need to consider how we can reduce our children's environmental exposures to the more likely causes of neurobehavioral disorders. In my view, the five best ways to reduce those exposures are to (1) watch what your family eats, (2) avoid insecticides and herbicides, (3) advocate against flame retardants, (4) spend time outdoors with your family, and (5) stay vigilant against older toxic threats.

Watch what your family eats

Several of the 10 most suspicious chemicals in the rise of neurobehavioral disorders can be found in a child's diet, in the chemicals passed from mother to fetus via the placenta, and in the chemicals stored in the mother's body from food she ate even before pregnancy. Endocrine disruptors and neurotoxins (organophosphates and organochlorines) are common classes of pesticides found in food. Differing levels of methyl mercury are found in fish, depending on the type of fish and where it was caught. Automotive exhaust and polycyclic aromatic hydrocarbons are released when food is transported.

When families choose to buy organic, they can avoid the endocrine disruptors and neurotoxins in pesticides. When they are picky about their fish, they can provide beneficial brain nutrients but avoid methyl mercury. When they buy locally produced food, they can minimize the automotive exhaust and polycyclic aromatic hydrocarbons released during transport. To make these informed choices, families can shop at a market that provides reliable information on which foods are organic, which fish is lower in mercury, and where the foods are produced.

Other resources abound. The Environmental Working Group website, for example, offers a list of the "clean 15" fruits and vegetables lowest in pesticides, along with the "dirty dozen" fruits and vegetables highest in pesticides.[7] According to the EWG, onions, sweet corn and pineapples are among the cleanest, whereas apples, celery and strawberries are among the dirtiest.

For fish, the Monterey Bay Aquarium website offers a Seafood Watch guide that recommends the safest varieties.[8] Their recommendations include wild salmon and farmed tilapia, as opposed to farmed salmon and canned tuna.

Another resource is the local farmer's market, where families can ask questions directly of the person who produced the food. The Natural Resources Defense Council website features a complete guide to farmer's markets in Marin County.[9]

Avoid insecticides and herbicides

The insect and weed killers we use on our pets, in our kitchens and in our yards end up in the bodies of our children. Some of these pesticides and

The Altschuler Center for Weight Loss & Wellness
Specializing in physician-supervised weight loss

Introducing Lipotron Body Contouring
Revolutionary, non-invasive treatment for:
- Reducing large volumes of fat without liposuction or surgery
- Reducing cellulite
- Diminishing wrinkles & tightening skin
- Contouring specific areas of the body
- No pain or downtime!

(415) 897-9800
GREENBRAE • NOVATO
www.MarinWeightLoss.com

Gail Altschuler, MD
MEDICAL DIRECTOR

The Altschuler Center for Weight Loss & Wellness

AUDIOLOGY ASSOCIATES
hear today, hear tomorrow

Specializing in:
- Diagnostic and Industrial Audiology
- Balance Care Program
- Tinnitus Care Program
- VNG, ABR/AABR, OAE
- Individual Communication Needs Assessment
- Digital Hearing Solutions
- Lip Reading/Listening Skills Training
- Hearing Assistance Technology (HAT) for TV, Telephone, Music and T-Coil Looping

Peter J. Marincovich, Ph.D., CCC-A
Director, Audiology Services

Judy H. Conley, M.A., CCC-A
Clinical Audiologist

Kelli Goering, Au.D., CCC-A
Clinical Audiologist

Visit our website for additional information at **audiologyassociates-sr.com**
Convenient email access to hearing healthcare providers

Member of American Speech Language Hearing Association
Member of American Academy of Audiology
Member of California Academy of Audiology

Four Offices Serving the North Bay

Toll Free: 1-866-520-HEAR (4327)

SANTA ROSA
Audiology Associates
1111 Sonoma Ave, Suite 316
(707) 523-4740

MENDOCINO
Mendocino Audiology Associates
45080 Little Lake Street
(707) 937-4667

NOVATO
Novato Audiology Associates
1615 Hill Road, Suite 9
(415) 209-9909

MILL VALLEY
Mill Valley Audiology Associates
7 N. Knoll Road, Suite 1
(415) 383-6633

a member of AUDIGY GROUP

herbicides are of the organophosphate class. By using alternative strategies, families can minimize their children's exposure to organophosphates. The Natural Resources Defense Council website lists several steps you can take to control pests.[10] Among the suggestions: clean frequently, seal entryways, use traps or try low-risk pesticides, such as boric acid.

Advocate against flame retardants

Brominated flame retardants and perfluorinated compounds, which are found in flammable household products, are possible carcinogens, with endocrine, immune and neurotoxic effects.[11] Flame retardants have been found in the bodies of children and mothers, in mother's milk, and in the placentas of newborns.[12]

To reduce deaths from fire, California law requires the addition of flame retardants to flammable household products. Unfortunately, experience over the past 30 years has shown that flame retardants actually increase death from fire by boosting carbon monoxide and hydrogen cyanide gas levels during fires.[13] Coalitions of chemists, fire fighters and environmental activists have been working for over a decade to overturn California laws requiring flame retardants.

Physicians can advocate for children's neurobehavioral health by informing patients that flame retardants don't serve any useful purpose and have clear dangers. A good resource for scientifically accurate, detailed information on flame retardants is the Green Science Policy Institute website.[14]

Spend time outdoors with your family

The idea behind environmental enrichment is that the brain can be stimulated by its surroundings. Studies on rats fed lead-laced food have shown that an enriched environment can mitigate some of the toxic effects lead has on learning; this effect may be more pronounced in boys.[15] In the case of ADHD, early research is pointing to an enriched environment and physical play as modalities that can modify the long-term developmental trajectory of the disorder.[16]

Outdoor play is another environmental enrichment with potential to modify neurodevelopment. In the outdoors, children can play freely, imagine, create and explore. Outdoor experiences offer a chance for the family to connect in a healthy way, far from television, computer screens and adult distractions. Letting your children experience free play and family togetherness may be one of the most important choices a parent takes toward a healthy neurodevelopmental environment.[17] For further details, visit the Children & Nature Network website.[18]

Stay vigilant against older toxic threats

Reductions in exposure to lead and polychlorinated biphenyls (PCBs) are two great success stories in environmental health. Both of these chemicals were eliminated from use at their major sources about 30 years ago. Leaded

MARIN INTEGRATIVE PHYSIATRY
ROBERT A. SCHULMAN, MD, FAAPMR, FAAMA
Is pleased to announce the relocation of the practice from 156 Fifth Avenue, New York City to:
250 Bel Marin Keys Blvd
Suite D4
Novato, CA 94949
(415) 839-8399
schulman@marinphysiatry.com
www.marinphsyiatry.com
Electrodiagnostic Medicine
Medical Acupuncture
Osteopathic Manual Therapy
Pain Medicine (opiate avoidant)
Herbal Medicine, Nutritional Supplements
Orthopedic Medicine
Movement Reeducation
BOARD CERTIFIED
Physical Medicine & Rehabilitation
Pain Medicine (AAPMR)
Medical Acupuncture
SENIOR FACULTY
Helms Medical Institute

- Custom Orthotics and Prosthetics
- Nationally Accredited Facility
- American Board Certified Practitioners

John M. Allen CPO
Leslie A. Allen CP
1375 S. Eliseo Dr. Suite G
Greenbrae, CA 94904
415-925-1333 telephone
415-925-1444 fax
Helping our patients one step at a time.
ALLEN
ORTHOPEDIC LABS, INC.

gasoline and leaded home paint are no longer used, and PCBs are no longer employed to insulate electric equipment or in caulking. Yet, these chemicals persist as health problems for our children since they are still found in old buildings. Lead is found in the paint of homes built before 1978, and PCBs are found in the caulking and electrical transformers of buildings built or renovated between 1950 and 1970.

Low-level lead exposure can cause attention problems, cognitive delay and speech delay. Despite the success we've had in lowering childhood exposure by universal lead screening and interventions for elevated blood lead levels, many American children continue to live, learn and play in substandard buildings with chipped and peeling leaded paint. Children are also exposed through toys or ceramic painted dishes sold with illegally elevated lead levels.

PCBs continue to persist as well. They are found in every creature on earth at levels proportional to their level on the food chain. They persist on surfaces, soil and in the air. They are also still found in elevated levels in schools and other buildings, as older caulking and electrical insulation deteriorate. Since PCBs have known neurotoxic effects, they present not only a health burden on the children in those buildings, but also a financial burden on the institutions responsible for maintaining the buildings. New methods of covering old caulking with new varieties offer more affordable options at remediation.

Much of what we know about the dangers of PCBs and lead was discovered well after their use was ended. Both were removed from production due to their persistence in the environment, prolific presence in humans, and potential risks suggested by early studies and likely mechanisms of action. The experience with these two toxins teaches us that we don't have to wait until all the research is finished and agreed upon to prudently control our children's exposure to neurotoxic chemicals. It also teaches us that when a chemical persists in the environment, its effects can be felt long after its use is ended.

To lessen possible exposure to lead and PCBs, families are advised to keep homes, particularly windows, well maintained. Families should also follow careful construction and remediation practices when working in older homes. The EPA offers two websites with helpful advice on dealing with lead and PCBs.[19,20]

By using the five strategies discussed above, families can maximize their ability to protect the developing brains of their children. We need to acknowledge that the environmental cocktail of toxins in our children is contributing to the alarming rise in neurobehavioral disease. With the promise of new collaborative research on ADHD and autism, we may be able to slow or even halt the rising tide of neurobehavioral disorders in our children. ◇

Email: abrockutne@gmail.com

IHM INSTITUTE FOR HEALTH MANAGEMENT
A Medical Clinic / Robert Park, M.D., Medical Director
THE SAFE, EFFECTIVE APPROACH TO RAPID AND PERMANENT WEIGHT LOSS
• Medically Supervised • Nutritional Counseling
• Registered Dietician • Long Term Weight Maintenance
715 Southpoint Blvd., Suite C
Petaluma, CA 94954
(707) 778-6019 778-6068 Fax
1100 South Eliseo, Suite 2
Greenbrae, CA 94904
(415) 925-3628

References

1. Landrigan PJ, et al, "Environmental pollutants and disease in American children." *Enviro Health Perspec,* 110:721-728 (2002).
2. Landrigan PJ, et al, "A research strategy to discover the environmental causes of autism and neurodevelopmental disabilities," *Enviro Health Perspec* (Apr 25, 2012: epub ahead of print).
3. CDC, "Prevalence of autism spectrum disorders," *MMWR Surveill Summ,* 61:1-19 (2012).
4. Bloom B, et al, "Summary health statistics for U.S. children," *Vital Health Stat,* 10:1-80 (2011).
5. Cuffe SP, et al, "Prevalence and correlates of ADHD symptoms in the national health interview survey," *J Atten Disord,* 9:392-401 (2005).
6. Sutton P, et al, "Toxic environmental chemicals," *Am J Ob-Gyn,* (Mar 8, 2012: epub ahead of print).
7. www.ewg.org/foodnews/
8. www.montereybayaquarium.org/cr/seafoodwatch.aspx
9. www.nrdc.org/greengate/guides/mar_mari.asp
10. www.nrdc.org/health/pesticides/gpests.asp
11. Herbstman JB, et al, "Prenatal exposure to PBDEs and neurodevelopment." *Enviro Health Perspec,* 118:712-719 (2010).
12. Main KM, et al, "Flame retardants in placenta and breast milk and cryptorchidism in newborn boys," *Enviro Health Perspec,* 115:1519-26 (2007).
13. Shaw SD, et al, Halogenated flame retardants: do the fire safety benefits justify the risks?" *Rev Enviro Health,* 25:261-305 (2010).
14. www.greensciencepolicy.org
15. Anderson DW, et al, "Sex and rearing condition modify the effects of perinatal lead exposure on learning and memory," *Neurotoxicology* (Apr 21, 2012: epub ahead of print).
16. Halperin JM, Healey DM, "Influences of environmental enrichment, cognitive enhancement and physical exercise on brain development," *Neurosci Biobehav Rev,* 35:621-634 (2011).
17. Milteer RM, et al, "Importance of play in promoting healthy child development and maintaining strong parent-child bond," *Pediatrics,* 129:204-213 (2012).
18. www.childrenandnature.org
19. www.epa.gov/lead/
20. www.epa.gov/epawaste/hazard/tsd/pcbs/index.htm

Is our tap water safe to drink?

Jason Eberhart-Phillips, MD, MPH

Clean and safe water is the foundation of healthy communities, healthy families and a healthy economy." So said Robert Perciasepe, deputy administrator of the Environmental Protection Agency, last year when wrapping up his testimony at a U.S. Senate hearing on drinking water safety.[1] Perciasepe had been summoned to Capitol Hill because of mounting concerns that America's drinking water may not be as safe as it should be, and that years of lax regulation of chemical contaminants under the 38-year-old federal Safe Drinking Water Act could be making the problem worse.

Prior to the hearing, the EPA had been criticized in a report by the Government Accountability Office for the way the agency determines which contaminants to regulate among the tens of thousands of chemicals released into the environment by industry, agriculture and consumers. (The GAO is the investigative arm of Congress.) Although researchers have identified hundreds of chemicals in drinking water supplies that may cause cancer, birth defects or other human health problems, the EPA has prescribed standards for just 91 contaminants. In the past 16 years, only one toxic substance—perchlorate—has even begun the process of being added to the list of regulated contaminants, and that one exception has come only in response to public outcry.

Dr. Eberhart-Phillips is the former Public Health Officer for Marin County.

Beyond this glacial pace of change, many of the standards used for contaminants the EPA actually regulates may be out of date. Most of the maximum contamination levels the EPA allows—levels given in parts per billion—have not been changed since the 1980s or earlier, despite new research that points to unwelcome health effects for some contaminants at lower concentrations than previously thought.

How clean and safe is the water coming out of the taps in homes and businesses today? Critics say that we don't really know if our water is safe, and that we could do a better job of finding out. The Environmental Working Group (EWG), for example, reviewed the water quality records of almost 48,000 suppliers in 45 states from 2004 to 2009 and found that more than 200 unregulated but potentially harmful chemicals were present in the nation's drinking water supply.[2] Because no maximum allowable levels in drinking water have been established for any of these contaminants, they are legally permissible in any amount—even at levels that may, over time, endanger the health of some consumers, according to the EWG.

Records obtained by the EWG for the two largest suppliers in Marin County found no violations of mandatory state or federal standards, but each supplier had eight unregulated chemicals detected in their water at levels exceeding established health guidelines. (For details of these findings, go to www.ewg.org/tap-water/whats-in-yourwater.)

In all large systems, drinking water is routinely monitored for contamination from infectious agents, radionuclides and chemicals, both organic and inorganic. These contaminants may occur naturally, or they may enter the drinking water supply as the result of storm water runoff, wastewater discharges, agriculture or mining. Public health attention is increasingly focused on the potential risk from the immense array of chemicals now on the market, including pesticides, fertilizers, volatile

organic compounds and pharmaceuticals. According to the EWG, hundreds of these chemicals appear in treated drinking water, and most aren't being regulated.

"Those [chemicals] that are in the drinking water should be regulated by the EPA so that the public can be assured that levels are safe," said Lynn Goldman, dean of the School of Public Health at George Washington University, at last year's Senate hearing. "Minus the establishment of clear maximum contaminant levels how are we to know that the chemicals in [the public's] water are safe?"[3]

According to the GAO report issued before the Senate hearing, the EPA relied more on the easy availability of data than on considerations of public health risks when choosing which contaminants to consider for future regulation.[4] Even worse, the GAO found that the EPA often failed to use testing methods that were sensitive enough to detect low-level exposures of potential contaminants in drinking water—exposures that could be harmful to health. In a classic example of "see no evil," the EPA made its determinations not to regulate certain contaminants largely on the basis of not finding them in most drinking water supplies. As the GAO noted, the absence of occurrence data does not always imply the absence of risk.

The banned insecticide dieldrin is a case in point. Dieldrin can persist in the environment for decades, but the EPA chose not to regulate it in drinking water after relying on tests that could only detect dieldrin down to a concentration that is at least 10 times greater than the level at which adverse health effects might occur from prolonged exposure. These effects include headaches, dizziness, irritability, vomiting or uncontrollable muscle movements. Chronic exposure to dieldrin may cause an increased risk of cancer or disorders of the central nervous system.

In determining that dieldrin did not need to be regulated in the nation's drinking water, EPA officials noted that the chemical was detected in fewer than 1 in 1,000 samples. But when a more sensitive testing regime was used by the U.S. Geological Survey, it found dieldrin in 3.1% of public well samples—and most of the tainted specimens were contaminated at a level far above the benchmark for health concern.

The GAO report also criticized the EPA for failing to protect especially vulnerable populations—including young children, the frail elderly and people with weakened immune systems—from pollutants in drinking water. Until recently, the EPA's assessments of risk have been largely based on research done with healthy adults or animals, failing to take into account subgroups with unique exposure patterns or sensitivities. Children, for example, have a greater susceptibility to many toxins detected in drinking water because their bodies and minds are rapidly growing. They also consume far more drinking water per unit of body weight than adults do, increasing their exposure to whatever contaminants the water contains.

The GAO report offered its sharpest criticism for the way the EPA initially decided not to regulate perchlorate in drinking water in 2008. The report said the EPA "used a process and scientific analyses that were atypical, lacked transparency, and limited the agency's independence in developing and communicating scientific findings."

The story of perchlorate—which is used to make rocket fuel, fireworks, flares and explosives—illustrates how advances in detection and in the knowledge of health effects have created a new urgency to regulate chemical contaminants in drinking water. Sadly, the story also illustrates how regulatory processes designed to protect the public can be trumped by other considerations.

During the 1990s, perchlorate started turning up in groundwater all around the United States, as routine testing for such chemicals improved. Already perchlorate was known to inhibit the thyroid gland's uptake of iodine, but it was assumed that such effects occurred only at higher doses than were possible from exposure to drinking water. New evidence in animals, however, showed that the chemical's adverse effects could occur at much lower levels of exposure than previously thought.[5] A subsequent study, published by the Centers for Disease Control and Prevention in 2006, showed that thyroid hormone levels could be significantly reduced in women who were exposed to background levels of perchlorate.[6]

Further studies found that perchlorate is concentrated in breast milk, and may replace essential iodine for breastfed babies. One study found that 90% of nursing infants born to women who drank water containing perchlorate at a level equal to a preliminary EPA remediation target would ingest nearly three times as much of the chemical as the EPA's own maximum acceptable daily dose.[7]

Removal of perchlorate from groundwater sources of drinking water can be enormously expensive, and regulation may end up putting vast groundwater resources off limits for suppliers unable to meet the added treatment costs. In the Inland Empire of Southern California, where groundwater aquifers have been found to contain very high levels of perchlorate, the remediation is expected to cost hundreds of millions of dollars and take up to 30 years to complete.[8]

The GAO report describes in detail how high-level EPA officials directed staff to develop a justification for not regulating perchlorate in drinking water, bypassing the agency's standard internal scientific review process. In part because of the criticism of its 2008 decision, the EPA reversed course in 2011 and said it would develop regulatory standards for perchlorate in drinking water in the next two years.

For physicians and patients alike, the controversies over unregulated contaminants, out-of-date standards and weak protections for vulnerable

people serve to highlight the importance of safe drinking water to community health. While most of the serious infectious risks from drinking water in the United States are thankfully becoming rare, there is less certainty that all necessary steps have been taken to eliminate human health risks from long-term exposure to chemical contaminants.

Patients may ask if bottled water is a safer alternative than tap water. The answer is no. Unlike your local water company, manufacturers of bottled water aren't required to publish their water quality data, so consumers don't really know what they are getting. Many of the same chemicals that contaminate tap water have turned up in bottled water in independent tests. In fact, some brands of bottled water are nothing more than bottled tap water.

In-home filtration devices are another alternative that patients may ask about. While these devices can help to remove some contaminants, they require repeated replacement to be effective, and that can be expensive over time.

The best way forward for whole communities is for greater protection of drinking water sources from chemical pollutants. At a minimum, the current concerns over chemical contamination point to a need for increased investment in monitoring of drinking water and for more research into potential health effects, both in the general population and in more sensitive groups. Only with sufficient data, reviewed through an open and transparent scientific process, can adequate regulation be undertaken to ensure that our drinking water is as clean and safe as it can be. ◇

References

1. Testimony of Robert Perciasepe to the U.S. Senate Committee on Environment and Public Works, epw.senate.gov/public/index.cfm?FuseAction=Hearings (July 12, 2011).
2. Environmental Working Group, National Drinking Water Database, www.ewg.org/tap-water/fullreport (2009).
3. Testimony of Lynn Goldman to the U.S. Senate Committee on Environment and Public Works, epw.senate.gov/public/index.cfm?FuseAction=Hearings (July 12, 2011).
4. Government Accountability Office, *Safe Drinking Water Act*, GAO-11-254 (2011).
5. McLanahan ED, et al, "Competitive inhibition of thyroidal uptake of dietary iodide by perchlorate does not describe perturbations in rat serum total T4 and TSH," *Enviro Health Perspec*, 117:731-738 (2009).
6. Blount BC, et al, "Urinary perchlorate and thyroid hormone levels in adolescent and adult men and women living in the United States," *Enviro Health Perspec*, 114:1865-71 (2006).
7. Ginsberg GL, et al, "Evaluation of the US EPA/OSWER preliminary remediation goal for perchlorate in groundwater," *Enviro Health Perspec*, 115:361-369 (2007).
8. Testimony of Anthony Araiza to the US Senate Committee on Environment and Public Works, epw.senate.gov/public/index.cfm?FuseAction=Hearings (July 12, 2011).

Advanced Technology...
Old-Fashioned Care

Providing a sensitive and thoughtful approach to complete reproductive care

- In Vitro Fertilization
- Ovulation Induction
- Male Infertility
- Ovum Donation & Surrogate Pregnancy
- Fertility Preservation for Cancer Patients

Advanced Fertility Associates
MEDICAL GROUP INC.

1111 Sonoma Ave, Suite 214
Santa Rosa, CA 95405
Tel: 707-575-5831 Fax: 707-575-4379
www.afamd.com

Respiratory Consequences of Air Pollution

Sridhar Prasad, MD

In 1775, Percival Pott published a treatise on cancer of the scrotum, a disease entity almost solely linked to chimney sweepers. He elaborated two lines of evidence supporting the causal relationship between chimneys and scrotal cancer: the epidemiological observation that the tumor was almost exclusively noted in boys employed as chimney sweepers, as well as the observation that "the disease, in these people, seems to derive its origin from a lodgment of soot in the rugae of the scrotum."[1] This description is widely credited as the first epidemiological observation linking an occupation to cancer. It is probably also one of the earliest observations linking air pollution with human disease. The prevalence of scrotal cancer did not decline until the 1940s, when heating shifted away from chimneys towards other technologies.

In December 1952, a dense smog descended on London, with "pea soup" air permeating the streets and into homes. This event probably was a consequence of industrial air pollution, cold weather, and "anti-cyclones" that prevented winds from dissipating the pollution.[2] The event, subsequently called "The Great Smog," lasted four days, with a surge in mortality occurring in the months that followed. Initially, the excess mortality was thought to be limited to 3-4 months after the event, was attributed to influenza and other lung infections, and was thought to number 3,000 to 4,000 deaths. Subsequent analysis suggested that the footprint of excessive mortality lingered for a full year and carried a total tally as high as 12,000 attributable deaths. The ultimate outcome of The Great Smog was a persistent legislative interest in mandating clean air in industrialized nations.

Since these reports, it has become clear that the combustion of flammable substrates, so vital for our economy, leads to the elaboration of a host of different gases into the atmosphere, with far-reaching climate and health-related outcomes. Several of these gaseous pollutants have been linked to human disease.

Dr. Prasad is a pulmonologist and critical care specialist at Kaiser San Rafael.

The combustion of fossil fuels leads to the elaboration of five major classes of gaseous pollutants:

Carbon dioxide is the most well-known product of combustion and is a classic example of a greenhouse gas.

Carbon monoxide is a product of incomplete combustion and is directly toxic by binding to hemoglobin irreversibly and rendering it dysfunctional.

Sulfur oxides are the major causative agent of acid rain. The sulfur usually reflects impurities in the fuel source.

Nitrogen oxides are a consequence of the direct interaction between oxygen and nitrogen prevalent in the air at the high temperatures associated with combustion.

Fine particulate matter (FPM) reflects particles of liquid or solids, aerosolized into the air. These are further divided into 10μM size (FPM-10) and 2.5μM size (FPM-2.5). In general, particles larger than 10μM tend to be entrapped by the mucociliary system of the airways, and do not deposit in the small airways and microcirculation of the lungs.

The research predominantly links FPM and sulfur oxides to human disease and death. The other gases (nitrogen oxides, carbon dioxide and carbon monoxide) are often simultaneously produced with FPM and sulfur oxides, but the relationship between the other gases and human disease is not clearly

shown.[3] Animal models suggest that all five gases can be linked to human disease, but human experiments have not confirmed this. Most measurements of air pollution levels, as performed by governmental organizations, focus on FPM and sulfur dioxides.

The mechanisms by which these gases cause death and disease are incompletely understood. The most common hypothesis is that inflammation occurs when the gases breach into the bloodstream. According to this hypothesis, the pollutants evade the mucociliary clearance system and deposit in the alveoli and small airways of the lungs. From there, they are absorbed into the bloodstream, where they are pro-inflammatory and can precipitate acute pro-coagulant and atherosclerotic events. Thus, acute air pollution exposure is linked to acute cardiac death. One study showed that when ambient South Boston FPM levels surged, there was a corresponding increase in local hospital admissions for acute myocardial infarction within 24 hours.[4]

Chronic exposure to FPM and sulfates has also been linked to increased mortality. This correlation was first characterized in a landmark study by Dockery et al.[5] The study followed 8,100 white men and women from six different cities prospectively over 16 years, with serial measurements of particulates and sulfates in their respective cities. The authors controlled for tobacco abuse, overweight, blood pressure, diabetes, gender and education. The final results showed a compelling independent increased risk of cardiopulmonary death, based on increased exposure to FPM and sulfates. The major causes of excessive mortality were lung cancer and cardio-respiratory disease.

Air pollution from combustion is the most common cause of death of children in developing countries. The combustion usually occurs in the context of burning fuel for cooking in enclosed and poorly ventilated informal structures, such as huts or shacks. The mechanism of lung injury is probably from deposition of particles in the small airways, with subsequent inflammatory response and airway inflammation.

Both acute and chronic exposure to air pollution have been linked to chronic lung disease. After massive exposure to dust and air pollution following the terrible events of Sept. 11, 2001, New York City firemen and emergency response workers suffered a 10% decline in lung function, compared to before the events. This decline continues to persist with serial measurements over seven years.[6]

Chronic exposure to increased air pollution has also been linked to decreased lung development in children. In one study, 1,700 children from 12 separate communities in Southern California were followed over eight years, with serial measurements of lung function as well as ambient pollution levels in their communities.[7] The findings showed a clear correlation between increased levels of pollutants and decreased development of lung function.

Fascinating studies in abatement of pollution show that a temporary decrease in air pollution can reduce acute illness. A Utah steel mill, for example, was shut down periodically during labor disputes between 1985 and 1988. Admissions to local hospitals for asthma and pneumonia decreased two- to threefold during the fall and winter, in both adults and children, when the mill was closed.[8] During the 1996 Olympic games in Atlanta, asthma hospitalizations and exacerbations in the city dropped by 40%; this drop correlated with a 22% reduction in traffic due to congestion-easing measures.[9]

The United States and other industrialized countries have tried to limit air pollution by tightening emission standards for cars and factories, among other measures. Increased energy efficiency and transition to cleaner energies such as solar power have also mitigated pollution. In addition, many polluting industries have shifted to poorer countries, as wealthier countries transition from manufacturing to services. In the United States, the reductions in air pollution from these factors have been linked with consistent declines in mortality. One study estimated that between the 1970s and the 1990s, decreased air pollution levels in the United States led to an increased life expectancy of 0.6 years, or roughly 15% of the total improvement in life expectancy over this time period.[10]

The optimal level of air pollution is not known. Clearly, a future without any air pollution is impractical, but finding the right balance between industry and public health continues to be a challenge for academics, policy makers and legislators. As clean technologies and alternative energies become cheaper and more plentiful, the trade-offs for this balance may be easier to make. ◇

Email: sridhar.k.prasad@kp.org

References

1. Brown JR, Thornton JL, "Percivall Pott and chimney sweepers' cancer of the scrotum," *Br J Ind Med,* 14:68-70 (1957).
2. Bell ML, et al, "Retrospective assessment of mortality from the London smog episode of 1952," *Enviro Health Perspec,* 112:6-8 (2004).
3. Brunekreef B, Holgate ST, "Air pollution and health," *Lancet,* 360:1233-42 (2002).
4. Peters A, et al, "Increased particulate air pollution and the triggering of myocardial infarction," *Circ,* 103:2810-15 (2001).
5. Dockery DW, et al, "Association between air pollution and mortality in six U.S. cities," *NEJM,* 329:1753-59 (1993).
6. Aldrich TK, et al, "Lung function in rescue workers at the World Trade Center after 7 years," *NEJM,* 362:1263-72 (2010).
7. Gauderman WJ, et al, "Effect of air pollution on lung development from 10 to 18 years of age," *NEJM,* 351:1057-67 (2004).
8. Pope CA, "Respiratory disease associated with community air pollution and a steel mill, Utah Valley," *Am J Pub Health,* 79:623-628 (1989).
9. Friedman MS, et al, "Impact of changes in transportation and commuting behaviors during the 1996 Summer Olympic Games in Atlanta on air quality and childhood asthma," *JAMA,* 285:897-905 (2001).
10. Pope CA, et al, "Fine-particulate air pollution and life expectancy in the United States," *NEJM,* 360:376-386 (2009).

A Different Kind of Secondhand Smoke

Ina Gotlieb, MA

While most Americans are aware of the risks posed by secondhand tobacco smoke, we rarely think of our fireplaces, woodstoves, and outdoor fire pits and chimneys as hazards to our health. People who would never dream of smoking a cigarette think nothing of burning wood because it seems so "natural." Yet wood smoke contains many of the same toxic and carcinogenic substances as cigarette smoke and has many of the same health impacts. Enacting laws to reduce public exposure to secondhand tobacco smoke took more than 30 years—but it is not necessary to wait for new laws and regulations to reduce wood smoke pollution and its effects on our health.

California has categorized secondhand tobacco smoke and diesel exhaust as Toxic Air Contaminants, and both are now regulated by the state to reduce public exposure. Like wood smoke, both cigarette smoke and diesel exhaust produce complex mixtures of substances that are proven hazards to human health. The table on the next page illustrates the similarities between these three sources.

The process of wood burning creates dioxin—one of the most toxic and persistent substances on earth.[1] According to the Bay Area Air Quality Management Agency, one-third of the total amount of dioxin in the Bay Area comes from wood burning.[2] Wood smoke also contains other toxic and carcinogenic substances, including dibenzocarbazoles and mercury.

Diesel exhaust, cigarette smoke and wood smoke contain high concentrations of particulate matter, which epidemiological studies have linked to morbidity and mortality. Wood smoke produces far more particulate pollution than cigarette smoke. EPA researchers estimate the lifetime cancer risk from wood smoke to be 12 times greater than from a similar amount of cigarette smoke.[3]

Wood smoke is actually the largest cause of particulate matter in the Bay Area, accounting for up to half of the region's daily wintertime particulate pollution—more than diesel and industry sources.[2] The larger particles of soot and other carbon byproducts of wood combustion settle out of the air closer to the source, but the smaller particles tend to stay airborne for longer periods and over greater distances and can penetrate even weatherproofed doors and windows. Studies have shown that particle pollution levels inside homes can reach up to 70% of the pollution levels outdoors.[4]

On cold winter days (when people tend to burn wood), the air we breathe can quickly become unhealthy. Winter weather conditions create temperature inversions that put a lid over the lower atmosphere, trapping hazardous pollutants close to ground level. These inversions especially affect the valleys and canyon areas found throughout Marin and Sonoma counties. Readings from air monitoring equipment in San Geronimo Valley, Novato and Santa Rosa have shown extremely high wintertime particulate levels, in large part due to the high number of wood stoves used to heat homes in those communities.[2]

The Bay Area is currently considered to be out of attainment of the EPA's standards for particulate matter because of our wood-burning activities. To help our region attain the national standards, the Bay Area Air Quality district operates a wintertime Spare the Air program to alert residents about conditions that are especially bad for burning wood (usually when the weather is expected to be cold and the air is stagnant). During these "No

Ms. Gotlieb is the program director of Families for Clean Air, a Bay Area nonprofit organization.

Burn Days," burning wood is illegal, and fines are issued for violations.

The EPA and the Air Quality district have only recently begun to address wood smoke pollution, but years of studies have linked wood smoke with a litany of health hazards. These include asthma attacks, diminished lung function, increased upper respiratory illnesses, heart attacks, and stroke. Long-term exposure to wood smoke has been linked to emphysema, chronic bronchitis, and arteriosclerosis; and laboratory studies have linked wood-smoke exposure to nasal, throat, lung, blood and lymph system cancers.[5]

In a laboratory study at Louisiana State University, researchers found that hazardous free radicals in wood smoke are chemically active 40 times longer than those from cigarette smoke—so once inhaled, wood smoke will harm the body far longer than cigarette smoke.[6] Other estimates suggest that a single fireplace operating for an hour and burning 10 pounds of wood will generate 4,300 times more carcinogenic polyaromatic hydrocarbons than 30 cigarettes.[7]

While pollution from wood burning is harmful to everyone, research has shown that it is particularly dangerous for children. Studies show that wood smoke interferes with normal lung development in infants and children and increases the risk of lower respiratory infections such as bronchitis and pneumonia.[8]

Wood smoke also affects our elderly residents. Studies overwhelmingly show that fine particulate pollution is a risk factor for heart attacks and death from strokes.[9] A 1994 report on the adverse effects of particulate air pollution reported a 1.4% increase in cardiovascular mortality for each 10 mg/m3 increase in particulate matter.[10] Newer research has confirmed that both short-term and chronic exposure to fine particle pollution, such as the kind produced by wood smoke, leads to increased respiratory illness and hospitalizations in people 65 and older.[11] New studies have also shown another threat produced by cigarette and wood smoke: isocyanic acid, which is known to be part of a biochemical pathway linked to inflammation, cataracts, heart disease and rheumatoid arthritis.[12]

Wood smoke vs. other pollutants

Pollutant	Diesel Emissions	Tobacco Smoke	Wood Smoke
Benzene	X	X	X
Carbon dioxide	X	X	X
Carbon monoxide	X	X	X
Dioxin	X	X	X
Formaldehyde	X	X	X
Lead	X	X	X
Methane	X		X
Nitrogen oxides	X	X	X
Particulate matter	X	X	X
Polycyclic aromatic hydrocarbons	X	X	X

Without fire, the human species would probably not have survived, and our civilizations could not have flourished. But the more we learn about the health impacts of wood burning, the more it seems obvious that we need to reduce wood smoke to improve our quality of life.

Like so many other "natural" things we've exposed ourselves to in the past—including tobacco smoke, asbestos and lead—it's time to acknowledge that wood smoke is a substance we can and should avoid. Physicians are urged to discuss wood burning with patients and their families, especially those that are most at risk, such as children, the elderly, and patients suffering from heart, lung and other ailments. ◇

Email: igotlieb@familiesforcleanair.org

For more information and brochures about wood smoke, visit www.familiesforcleanair.org.

References

1. Lavric ED, et al, "Dioxin levels in wood combustion," *Biomass & Bioenergy,* 26:115-145 (2004).
2. Bay Area Air Quality Management District, "Proposed new regulation 6," staff report (June 4, 2008).
3. U.S. Environmental Protection Agency. "Residential wood combustion study," Report No. EPA/910-82-089K (1984).
4. Pierson WE, et al, "Potential adverse health effects of wood smoke," *West J Med,* 151:339-342 (1989).
5. Naeher LP, et al, "Woodsmoke health effects," *Inhalation Toxicology,* 19:67-106 (2007).
6. Pryor W, "Biological effects of cigarette smoke, wood smoke and the smoke from plastics," *Free Radical Biology & Med,* 13:659-676 (1992).
7. Bari MA, et al, "Particle-phase concentrations of polycyclic aromatic hydrocarbons in ambient air of rural residential areas in southern Germany," *Air Quality & Atmos Health,* 3:103-116 (2010).
8. Clark NA, et al, "Effect of early life exposure to air pollution on development of childhood asthma," *Enviro Health Perspec,* 118:284-290 (2010).
9. Burnett RT, et al, "Cardiovascular mortality and long-term exposure to particulate air pollution," *Circ,* 9:71-77 (2004).
10. Larson TV, Koenig JQ, "Wood smoke: emissions and noncancer respiratory effects," *Ann Rev Pub Health,* 15:133-156 (1994).
11. Kloog I, et al, "Acute and chronic effects of particles on hospital admissions in New England," PLoS ONE 7:e34664 (2012).
12. Roberts JM, et al, "Isocyanic acid in the atmosphere and its possible link to smoke-related health effects," *Proc Nat Acad Sci,* 108:8966-71 PNAS (2011).

MMS President Irina deFischer, MD

Steve Osborn

Irina deFischer, MD, a family physician at Kaiser Permanente, becomes president of the Marin Medical Society in July. Born in San Francisco in 1955, she grew up in Marin County and attended Stanford University, where she received both a BS in biology and an AB in French, the language her parents spoke at home. She made use of her bilingualism by attending medical school in Switzerland, at the University of Lausanne.

After receiving her MD in 1981, Dr. deFischer returned to the United States to complete her internship and residency in family medicine at UCLA and the Antelope Valley Hospital in Lancaster. "I had been interested in family medicine every since I was in college," she recalls. "I was really attracted to the breadth of the specialty and the opportunity to have continuity of care with patients across their lifespan."

In 1985, Dr. deFischer moved back to Marin County, joining the Ross Valley Medical Clinic. One year later, she also became medical director in the residential treatment facility for adolescents at Sunny Hills, an agency for foster children. After the Ross Valley clinic closed in 1989, she was in private practice for a couple of years and then became medical director of the Villa Marin Retirement Center, a post she held until 1997. Thereafter, she worked as a pool physician for Kaiser Permanente, as medical director of the Pine Ridge Care Center, and as an associate physician at Tamalpais Family Practice. She became a full-time physician at Kaiser Petaluma in 2003, shortly after Kaiser San Rafael opened its family medicine section.

Dr. deFischer is married to Dr. Scott Sinnott, a critical care internist whom she has known since high school. They have two children: Jeanne-Marie, who is graduating from medical school in June, and Marc, who is working in real estate in Los Angeles. In addition to her work at Kaiser, Dr. deFischer regularly volunteers for the Rotacare Free Clinic and is also active at the St. Nicholas Orthodox Church in San Anselmo.

This interview was conducted at Dr. deFischer's home in Greenbrae on April 19.

Mr. Osborn edits Marin Medicine.

Q: In your view, what are the most pressing medical needs in Marin County?
A: One of the big issues is trying to provide care for the uninsured. We do have the community clinic safety net, but it is often difficult for patients to access because they can't get appointments or they have to travel too far or they cannot afford the copays. That would be one issue. Another one is lifestyle—things like drinking. Marin residents are relatively healthy, but we drink more than other people in the state. It might be tied to the breast cancer epidemic. There is also the problem of underage drinking and drug use. Delinquency among young people affects their health and the health of the community.

Q: Do you see these problems in your own practice, among your patients?
A: I deal with the problems of the uninsured when I volunteer at the Rotacare Free Clinic. At Kaiser I do not see that many uninsured people, but I definitely see people who have illnesses that are the result of poor lifestyle choices.

Q: Can you talk a little bit more about the Rotacare Free Clinic?
A: We opened the clinic in 1997, and I was involved with recruiting volunteers to staff the clinic. It started out at the Ritter Center, which is a center in San Rafael for homeless people. We treated a much smaller number of clients back then. Several years ago we moved to Kaiser in downtown San Rafael, so now we have more space, and a lot more volunteers, and a variety of clinics that are offered. We have podiatry, dermatology, neurology, psychiatry and different specialty clinics that are held in conjunction with the Rotacare Clinic. We work with Marin Community Clinics for referring patients who need ongoing care, and we work with Operation Access for people who need surgery. Their volunteers offer free outpatient surgeries for the uninsured.

Q: How frequently do you volunteer at the Rotacare clinic?
A: I work there about once every one or two months in the evening.

Q: The idea is that anybody can show up, if they have no insurance? They can just present at the clinic and be taken care of?
A: Right. It's just like a drop-in clinic for urgent care needs, whatever can be provided on an outpatient basis.

Q: How much has the clientele expanded since the clinic was founded?
A: Quite a lot. I don't know the actual numbers, but we have thousands of visits a year. We're open on Monday and Thursday evenings, and we usually have three physicians and a nurse practitioner working on any given evening. We also have volunteer pharmacists, nurses, interpreters and Rotarians who come help out. We provide free medications, and we have radiology and laboratory services available for the clients that are donated by local hospitals.

Q: As a geriatrician, what are the main challenges you see for older people?
A: One of the first issues that comes up for older people is their general loss of independence and not being able to drive. We do not have a very good public transportation system, and it is difficult for people to get around when they don't drive. Also, getting help at home is expensive. The poorest people can qualify for in-home supportive services, but that is somewhat limited. A lot of the elderly population needs some sort of in-home care and cannot afford it. They do not really qualify for a skilled nursing facility or getting custodial care that would be covered by Medicaid. They're in an in-between stage where they need assisted living.

Q: Do you think we are well-equipped to handle the increasing number of older patients?
A: We are going to need a lot more doctors, especially primary care doctors. We are definitely not training enough doctors in California or in the states to meet our needs.

Q: In addition to geriatrics, you also have a specialty in eating disorders. How did that come about?
A: I became interested in eating disorders shortly after I joined Kaiser and had a couple of patients with eating disorders. I started attending case conferences where we would discuss the patients, and after a while I was asked to be the point person for monitoring adult patients from a medical standpoint when they were being treated for eating disorders. I have been doing that for five or six years now.

Q: How common are eating disorders among your patients?
A: Patients who have really severe anorexia are relatively rare, the tip of the iceberg. There are many undiagnosed eating disorders among our patients, including bulimia or binge eating disorders, which can aggravate other medical conditions.

Q: In Marin County, many physicians are consolidating into large groups. What effect do you think this consolidation is having on medical care in Marin County?
A: Having these networks is good both for physicians and for patients because it increases the availability of care at different times for patients and offers physicians more predictable scheduling and opportunities to have time off. A lot of these groups use electronic medical records that are shared between the different members of the network, which is good for continuity of care. If a patient calls on the weekend and gets a different doctor who is not familiar with them, the doctor can access their records. The doctor would not have been able to do that in the past; they would just know whatever the patient told them about their problems.

Q: Do you think it's a good thing that the physicians are consolidating into networks?
A: I think it is good. I think that we are able to provide quality care at a more affordable price.

Q: With the doctors in different groups, what is your sense of the impact on the collegiality among physicians in Marin County? Do you interact with physicians in the other medical groups?
A: I do. One of the things I like about the Marin Medical Society is that it allows me to interact with doctors in other practice modes. I have maintained my contacts and relationships with them over the years by being in the medical society.

When I was in private practice, I felt that I had good relationships with my colleagues. It is a little bit of a different dynamic. Often the primary care doctors will join together in call groups so they cover each other's patients and so forth. And then there is the different dynamic in dealing between primary care and specialty when you are in private practice or someplace like Kaiser, which is an integrated group. In private practice there is a fee for service model, so you don't get paid unless you see a patient. The specialists are usually kind of wooing the primary care doctors and wanting them to send patients. In a group like Kaiser, everybody is salaried, and the specialist is more likely to just give the primary care doctor advice on how to manage a patient over the phone instead of seeing the patient in person. The specialist is more likely to want to share their knowledge and skills with the primary care doctor to offload some of the work.

Q: Many health problems in American society can be traced to our culture, to fast food, and to poor urban design where people have no opportunity to walk. How involved do you think doctors should be in addressing these problems?
A: I think we need to be very much involved in that, and that is something that medical societies have traditionally done over the years. We have been involved in things like seatbelt and anti-smoking legislation, and a host of public health measures, such as trying to get sodas out of the schools.

One of the things I'm proud of in this area happened when I became medical director at Sunny Hills Children's Garden. At that time, the kids were allowed to smoke. As rewards for good behavior, they would get cigarettes. I just really put my foot down and said I don't think we should be allowing these kids to smoke here. So we got them all to quit smoking.

Q: What do you think doctors should be doing to address the obesity epidemic, outside of what they see in the office?
A: Increasing the availability of healthy foods for the population by supporting farmers markets, delivery of produce baskets at the workplace, and working with schools on having healthier lunch programs for the kids. Trying to work with city planners to have more pedestrian friendly areas and developments that include work and residential areas that are close together so people can walk back and forth. We also need healthy ways for kids to walk or bicycle to school.

Q: How well do you think the medical society is serving the physicians in Marin County?
A: The main thing we do is to advocate for physicians and patients at the local, state and national levels. We provide a venue and forum for physicians to get together and network; to socialize and get to know each other; and also to take their issues forward in the form of CMA policy and legislation.

Q: Do you have any specific projects in mind for when you are president?
A: I mostly want to be there to serve the members and carry out the wishes of the members. I would like to reach out to medical students and residents in surrounding communities to introduce them to our members and encourage them to think about coming to practice in Marin someday. Having medical students and residents involved increases the vitality of the organization.

Q: Where would the students and residents come from?
A: From UCSF and Touro medical schools, and the Santa Rosa Family Medicine Residency for starters.

Q: Do any Marin hospitals offer rotations for these students?
A: Some of them do. We have recently started a program at Kaiser where UCSF students are rotating through the medicine clinics in San Rafael and Petaluma. We have also had individual students from different schools who have done rotations privately in different offices. If they are exposed to the physician community here, I think that would help them build relationships with the physicians and encourage them to practice here later on.

Q: Are there any other things that you think the medical society should be doing in the larger medical community?
A: The medical society is a forum to exchange ideas, a resource for various practice needs, and a medium for sending representatives to CMA and AMA. The society has been a constant for me in my 27 years of practice. I have changed practice a number of times, but I have continued my involvement with MMS, and the staff has been really helpful to me over the years. I have enjoyed being able to keep in touch with all my colleagues in the different modes of practice, and I feel like we have more in common than we actually have differences. The medical society staff does a great job of keeping us all organized and on track.

Q: Do you have any closing thoughts?
A: Yes. I am trying to listen more closely to what my patients are saying and to acknowledge the relationship and that something important has happened between us in the visit. I appreciate the trust my patients place in me. I really appreciate getting to get to know so many different people and to be involved in their lives. It is a privilege and an honor. ◇

Email: irina.defischer@kp.org

The Marin-Sonoma-Napa ACO

Mark Wexman, MD

Insurance companies routinely retain large portions of the premium dollar, even as government programs send medical facilities huge payments for hospitalizations, ancillary services and testing. Physicians often compete over the remaining crumbs. Few opportunities have arisen to change this medical funding paradigm—until now. The Affordable Care Act of 2010 opens a new pathway for partnership and alignment among doctors, hospitals and/or insurance companies for Medicare patients. That pathway is the Accountable Care Organization.

The promise of the ACO is the return of a "share of savings" from healthcare expenditures for Medicare patients to a local organization that can implement better healthcare and illness prevention strategies. The ACO is the legal vehicle that encourages clinically integrated physicians, hospitals and other providers to create and align clinical protocols for successful treatment and transition of patient care through the inpatient and outpatient environment. We can then share in the savings, if any, by demonstrating a reduction in the projected cost of care for a Medicare population.

The Marin-Sonoma IPA is currently applying to be an ACO, and we expect to know before the end of the year if our application has been accepted. With the certainty of continued downward pressure on fee-for-service payments from Medicare (and thereby other insurers), if independent doctors, medical groups and hospitals are not in an ACO, there is no other mechanism for them to recoup the reduced reimbursement within the insurance system and maintain profitability.

Dr. Wexman, a Larkspur cardiologist, is managing partner of Cardiovascular Associates of Marin and chairman of the board for the Marin-Sonoma IPA.

The Marin-Sonoma IPA believes that developing an ACO should be central for independent physicians and hospital administrators as the key strategy for non-Kaiser patient care delivery. If we fail to implement an ACO in places like Marin, Sonoma and Napa counties, with all of their favorable health and economic attributes, then we deserve the cookie-cutter medicine likely to be imposed on us by far-away administrators and bureaucrats.

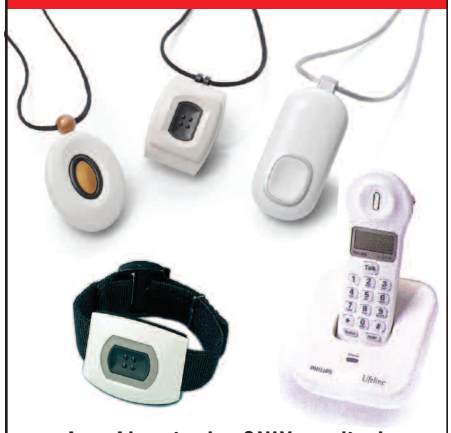
What does the structure of an ACO provide? It aligns the expense of an innovation in healthcare delivery with the economic incentive of better reimbursement for ACO providers who can demonstrate better care outcomes and patient satisfaction and "bend the cost curve." If we achieve the Three Aims stated in the ACO regulations—better care of individuals, better outcomes for populations, and lower growth in expenditures—then we share in dollars not expended on unnecessary care.

An ACO congestive heart failure care program, for example, would focus on keeping patients well and out of the hospital. CHF is a significant example because it is a high frequency illness, with great monetary cost and quality of life lost. What does it take to create better managed, less expensive CHF patients? The answer includes (1) intensively managed in-hospital treatment with collaboration between cardiologists and hospitalists or internists treating the acute illness, (2) a combined group of mid-level providers, nurses and pharmacy technicians armed with simple technology like weight-monitoring scales and (3) oversight and office follow-up by primary care doctors and cardiac specialists. Rapidly adjusting patient medicines and following best-practice protocols for optimal prognosis will reduce readmissions. Implementing better care processes via a community-wide electronic health record with accessible charting, along with rapid HIPAA-compliant communication tools for providers, can give patients and families quicker and better care in less expensive environments.

So why aren't these procedures in place today? Because the savings accrue to the insurer or the government payer, leaving hospitals and physicians with only the expenses and "heaven points" earned for doing the right thing. For our hospital partners, the scary thing about the new ACO paradigm is that keeping patients out of the hospital is counterintuitive to their longstanding financial planning. The standard hospital business plan of "filling beds with heads" now becomes "stop readmissions, reduce total admissions and collaborate as an integrated system of care." Under the ACO, hospital profitability depends on its share of the accumulated savings from bending the cost curve. The current ACO model will be protected from downside risk for three years, as systems are put in place and experience is gained.

LIFELINE
with AUTOALERT®

The only medical alert pendant that can call for help when you can't!



- AutoAlert is the ONLY medical response help button that automatically places a call for help if a fall is detected
- Enables you to continue to live independently at home
- Remarkably affordable- with no long term contracts

Lifeline®

For more information on the leading personal medical response service for more than 35-years call:

(707) 778-7883
(800) 949-2434
www.lifelinenorthbay.com

How do Medicare patients enroll in an ACO? They are attributed to the primary care physician with whom they have had most of their visits that year. How do primary care physicians, specialists and hospitals begin to participate in this new system? Primary care physicians can belong to only one ACO, but specialists can see patients from multiple ACOs, if they choose. Physicians can enroll in an ACO voluntarily by agreeing to share information and participate in clinical protocols. Patients are not limited in any fashion as to whether they can get healthcare in or out of the ACO.

The Medicare population in Marin, Sonoma and Napa counties is about 136,000 people, 45% of whom are already covered by Kaiser. That leaves about 75,000 Medicare recipients in our practices for a potential network. If we can change the inflation on medical cost from the 8% predicted to 4% actual, then half of the savings (2%) can be used for reinvestment in our community medical care processes and for additional hospital and physician reimbursement. How much money are we talking about for such small changes in the inflation of cost of care? The average Medicare patient uses about $12,000 per year in services, so total spending on the non-Kaiser group in Marin, Sonoma and Napa counties is about $900 million per year. The 8% expected inflation rate for that amount is $72 million per year, so if we reduce the inflation to 4%, we would organizationally share $18 million per year.

How does an ACO allow a change in the relationship of medical groups and hospitals with the large PPO insurers? As a clinically integrated group with an ACO designation, we can negotiate together and offer the programs and processes that were originally designed and demonstrated in our Medicare patients to these commercial insurers. In turn, if we have an effect on the health costs of the population under management, a portion of the savings could return to the ACO to distribute to its members and to invest in making the ACO even more effective. The potential for partnership with large PPO insurance companies that align risk/reward for improved health outcomes without shifting actuarial insurance risks to the doctor and hospital groups will be the key to successful implementation.

Doing nothing and waiting for the inevitable forces of healthcare economics to negatively affect the quality and value of medical practice is healthcare suicide. Although we cannot know the outcome of our investments in this ACO strategy in advance, we can be confident that we are using the best legal structure available to create a better program for healthcare delivery in Marin, Sonoma and Napa counties. This approach will certainly be more flexible and specific to our unique community needs than anyone in Washington or Sacramento is likely to propose. No waiting on the sidelines on this one: we must all step up and be held accountable to the current and next generation of physicians and communities that we serve. ◇

Email: mwexman@camsf.com

ACO Resources from CMA

The CMA website at **www.cmanet.org** offers a wealth of materials about ACOs and other aspects of the Affordable Care Act. Among the latest offerings:

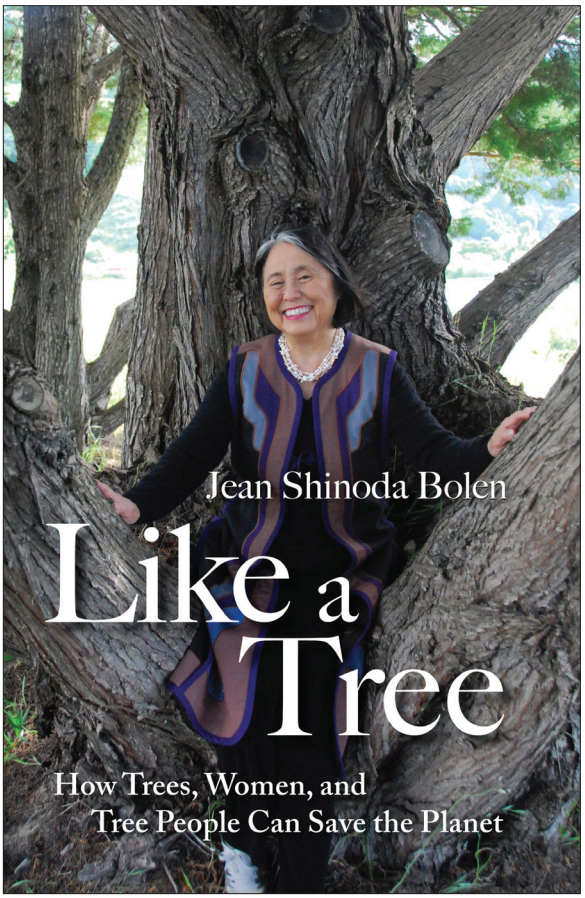
Legal and Practical Considerations Concerning Accountable Care Organizations (CMA On-Call document #201). Provides a general overview of ACOs and the legal and practical issues that physicians should consider when vetting ACOs.

Accountable Care Organizations and Medical Foundations (Powerpoint presentation). CMA General Counsel Francisco Silva outlines the requirements of the ACO and 1206(l) medical foundation laws and identifies risks and benefits that physicians should consider.

FAQs About Accountable Care Organizations (Patient handout). Handout for patients that explains their rights in relation to ACOs.

Introduction to "Like a Tree"

Jean Shinoda Bolen, MD



Dr. Bolen, a Mill Valley psychiatrist, has published almost a dozen books on spirituality, feminism and Jungian analysis. Last year, she published Like a Tree, *a scientific and lyrical homage to trees prompted by the loss of a beloved Monterey pine. The introductory section of the book appears below.*

The seed idea for this book began with the observation that there are "tree people," and that I am one of them. A tree person has positive feelings for individual trees and an appreciation of trees as a species. A tree person may have been a child who kept treasures in a tree, or had a sanctuary in one, or climbed up to see the wider world, a child for whom trees were places of imaginative play and retreat. A tree person is someone who may have learned about trees in summer camp or through earning a scout badge or was a child who could lose track of time in nearby woods or the backyard. A tree person met up with Nature in childhood or as an adult, and like the four-footed ones who retreat to lick their wounds, may still heal emotional hurts by going to where the trees are. A tree person understands why a young woman might spend over two years in an old growth, ancient redwood, in order to protect it from being cut down. A tree person can become a tree activist at any age.

A huge Monterey pine stood in front of the house that is now my home. I noticed it before I walked down the walk and across the entry deck to enter the house. It never occurred to me that by a vote of a homeowners association this beautiful tree that was here before any houses went up and was in its prime could be cut down because a neighbor wanted it down and could mobilize the necessary votes. In trying to save my tree, I was in many conversations and meetings, and found that there is a world of difference between tree people and "not-tree people."

I also found that there is a world of information to learn about trees, beginning with why this particular kind of tree thrives on a hillside ridge that often has a morning blanket of fog. Pine needles act as fog condensers that drip moisture down to the ground and, in effect, they water themselves. Tree people like me see the beauty of trees and may have photographed or painted them, but we may have a limited botanical knowledge of them. As I thought about writing this book, I remembered reading the classic novel *Moby-Dick,* and recalled how information about whales was interspersed throughout the narrative. I wanted to do something similar in this book, and in the process of learning about what a tree is and that they are the oldest living beings on Earth, I acquired a sense of wonder about them.

Rain forests have been called the lungs of the planet. Forests take in prodigious amounts of carbon dioxide, bind the carbon into themselves, and create oxygen, which is then released into the atmosphere we breathe. Each individual tree does this, just as each

individual human, just by breathing, produces carbon dioxide, which trees use. We have a reciprocal relationship with trees. Meanwhile, the tropical rain forests and arboreal forests in North America, northern Europe, and Asia are disappearing at an accelerating rate, while the number of humans grows geometrically. Global warming is related to the increase in carbon dioxide, methane, and other gases in the atmosphere, which humans produce indirectly through what we use. The more humans there are and the fewer trees there are, the more carbon there will be in the atmosphere and the warmer it will get.

Like a Tree is a title that draws upon the use of the word "like" as simile. There are chapter headings such as "Standing *Like* a Tree" or "Sacred *Like* a Tree" that describe similarities between trees, people, and symbols. "Like" is also a verb meaning having some affection for, as in "Do you *like* this tree?" Tree people can have a range of feelings for individual trees as well as particular species. We relate to trees in ways that not-tree people never do. The polarities of contrast between a tree person and a not-tree person: Joyce Kilmer's "I think that I shall never see / A poem lovely as a tree" and the statement attributed to Ronald Reagan, "You see one tree, you've seen them all."

On the day that my Monterey pine was cut down, I was not there to see it happen. I had done all I could do, short of organizing a demonstration to save it. The tree cutters would do the deed when I was away, and with a heavy heart I anticipated the loss on my return. I was in New York City at the United Nations. For years now, I have been going to the United Nations when the Commission on the Status of Women meets in March. Parallel meetings and workshops are held by non-governmental organizations concerned with protecting and empowering women and girls and with women's rights. The exercise of dominion over women and girls can take many terrible forms: trafficking, female genital mutilation, stoning women, honor-killings, or selling daughters to settle a debt. Closer to home, women and girls are dominated and demeaned through domestic violence, rape, and the sexual abuse of children.

Physically and psychologically, when a girl or woman is treated as property, she is "Like a Tree"—or the dog or horse that can be valued, loved, and treated well or worked, beaten, and sold. These are behaviors and patterns rooted in raising boys to identify with the aggressor and raising girls to learn powerlessness. These are distortions of natural growth.

A tree that receives what it needs of sun and rain, healthy soil for its roots, and room to grow becomes a healthy mature tree and a fine specimen. When conditions stunt growth, the result is usually a still-recognizable version of a particular kind of tree. In human beings, unless signs of malnutrition or abuse are visible to the eye, the stunted growth that results from withholding love, nutrition, medical attention, education, and human rights usually manifests as psychological, intellectual, and spiritual stunting, in *all* concerned.

The tree is a powerful symbol. Trees appear in many creation stories, such as the World Ash or the Garden of Eden. Religions, especially the Druids, have revered trees. Buddha was enlightened sitting under a Bodhi tree. Christmas is celebrated by decorating Christmas trees. There are sacred trees throughout the world. "Family tree" has a symbolic connection to the theme of immortality. Myths and symbols are the carriers of meaning. In them, a situation is presented metaphorically in a language of image, emotion, and symbol. Because human beings share a collective unconscious (C.G. Jung's psychological explanation) or the *Homo sapiens* morphic field (Rupert Sheldrake's biological explanation), a symbol comes from and resonates with the deeper layers of the human psyche.

Like a Tree circles around the subject of tree: the result is a series of views, from many different perspectives. My-

"I'm a sophomore at Stanford. Sonoma Academy inspired me to expect the most from myself."
—Diego Canales, Sonoma Academy Class of 2010
Half-tuition, 4-year STEM Scholarships
WWW.SONOMAACADEMY.ORG
Sonoma Academy
at Taylor Mountain

thology and archetypal psychology are sources of information about the symbolic meaning of the tree. Botany and biology classify and describe. To learn about trees is to appreciate them as a species. Beliefs about sacred trees and symbols of them have been part of many religions, and turned trees into casualties of religious conflicts. The unintended consequences of cutting down all the trees on Easter Island were disastrous, with applicable parallels to the fate of the planet. In Kenya, the Green Belt Movement engaged rural women to plant trees. When this became known through honoring the founder, Wangari Maathai, thirty million trees had been planted and, in 2004, she became the first African woman to be awarded the Nobel Peace Prize.

As I went deeper and deeper into the subject of trees, I entered a complex and diverse forest of knowledge, from archeological to mystical. I learned that we wouldn't be here at all—we, the mammals and humans on this planet—if not for trees. Whether huge forests or a single specimen that is one of the oldest living things on Earth, trees continue to be cut down by corporations or individuals motivated by greed or poverty, who are ignorant of or indifferent to the consequences or meaning of what they do. I learned that reforestation was the difference between cultures that stayed in place and thrived, and those that cut down the trees and did not: these are very applicable object lessons for humanity now. It's possible to learn from past history and see what will befall us or how trees may save us.

I've grasped a parallel learning from going to the United Nations when the Commission on the Status of Women meets. Women and girls are a resource. Educate a girl, and she will marry later, have fewer, healthier children, and almost all her earnings will benefit her family. With microcredit loans, women start their own small businesses. When there are enough women in high enough positions, such as in Liberia and Rwanda, the previous culture of corruption and violence disappears. Priorities shift to safety, education, and health. With peace, the economy grows. A convincing case can be made that participation by women is the missing key element in finding solutions for the financial, environmental, and military problems that underlie the instability of our world and the questions of survival or sustainability. Valuing girls is like valuing trees. It's good for them and for the planet.

There is a proliferation of grassroots activism. Nongovernmental organizations (NGOs) have been cropping up all over the world, numbering in the millions, including in China and Russia as well as Africa. Women grow small businesses into larger ones, and have been creating NGOs (80 percent are created by women) with the potential to change collective thinking. Ideas now can spread like a virus, which overcomes resistance to become commonplace. For a tree person who reads my words, whose awareness and concern have not yet extended beyond caring about particular trees, my intention is to take your consciousness deeper, as mine has gone, to involve your heart, mind, and imagination as the first step toward participation in saving trees and girls.

All that was left of my Monterey pine when I came home was the substantial stump; it was broad, irregularly shaped, beautiful in a way, still raw from the cutting and oozing sap. There was also an empty space against the sky where it once towered over my walk.

During the week I was away, when my tree was cut down, I talked to Gloria Steinem about my unsuccessful saga to save my tree. She said, "Remember Jean, you are a writer and a writer can have the last word." Many trees are cut down to make paper, which is the usual way a tree can become a book. My tree lives on through the words and spirit in this book. ◇

Website: www.jeanbolen.com

Four Generations of Compassionate Care
Since 1902, the Hittenberger family has supplied physicians and patients with life-changing orthotic and prosthetic devices. Equally acclaimed for our humanitarian work and our innovative designs, we offer three convenient locations throughout the North Bay.
Drew Hittenberger & Associates
Kentfield • Petaluma • Santa Rosa
Toll-free: 866-294-LEGS (5347)
www.hittenberger.com
~ Call to request a complimentary copy of our amputee guide. ~

From Columbus to Carneros

Miguel Delgado, MD

The Delgado Family Vineyard in the Carneros region of Sonoma County.

My interest in winemaking stems from my interest in moving to California from cold and blustery Columbus, Ohio. My brother and I wanted to end up in California to work, raise our families and enjoy the ocean. Boating was to be our hobby. In the late 1980s, he moved to Half Moon Bay, and I moved to Marin. He worked at Kaiser as an anesthesiologist and quickly purchased a 50-foot boat. We had made our dream come true.

The big day arrived. I brought the champagne, and we headed out to sea in my brother's boat as fast and crazy as we could. All of a sudden I became dizzy, nauseated, pale and sick as a dog. After repeating this many times and becoming known as "chum," I decided to find a new hobby. Winemaking sounded great.

Dr. Delgado is a plastic surgeon with offices in Novato and San Francisco.

My winemaking began in 1990, shortly after I started my plastic surgery practice in Novato. I joined a winemaking club in San Rafael, where we would purchase our grapes, crush them and start the fermentation process. I did this for two years, and the wine was undrinkable. In fact, it was absolutely horrid. I had a storm drain behind my house, so I decided to store the wine in there to keep it dark and cool. I would take off the steel grate over the storm drain and hop down into the hole and work on the wine. Wine needs a clean, almost sterile environment. My storm drain was far from it, and all the wine was both oxidized and contaminated.

I remember the time I added sugar to the chardonnay to improve the favor. NOT. My romantic hobby was a labor of love, with nothing to show for it.

I gave winemaking a rest for five years and worked hard in my practice. During this time I married my lovely wife, Becky, who shared my enthusiasm for making wine. We started making wine again with Kian Tavikoli, a friend's son who had graduated from UC Davis. He was working at Opus One as a chemist.

I wanted to be involved in picking the grapes and watching a winemaker through the early steps. Kian found good grapes from vineyards as a second pick after they have done their harvesting—almost like picking up the scraps. We called the wine Kian, and our first vintage was a 1995 cabernet/cabernet franc blend. The wine was never that good, but it was palatable, and it has held up over the years. The color is ruby red and the nose is earthy, but there is a bitterness that the palate cannot get past to want another sip. Aging can improve

good wine, but aging poor wine is an uphill battle. After this project, I just didn't want to make wine the following year. I was becoming seasick with failure again.

In 2006, I got the bug again. I wanted to enrich my life so that when I slowed down from work or retired I would have something I loved to do on a daily basis. Winemaking was the obvious choice. This time we wanted to start from the ground up and control all that we could. We were "all in."

Making wine starts at the vineyard, so Becky and I purchased a 23-acre planted vineyard parcel in the Carneros appellation of Sonoma County. This region is cool, hilly and open, with near-constant wind. Carneros is perfectly suited for pinot and chardonnay. Owning the vineyard was great because all the grapes were on contract to be sold to various wineries. We produce about 100 to 120 tons of fruit each year, depending on the weather pattern.

We started making our own wine about four years ago, beginning with 25 cases of pinot noir and 25 of chardonnay. Each year we learn from the previous year. We are slowly developing our Delgado Family Vineyard brand and find it is something fun to do. Our wine is currently available only to family and friends, but we hope to offer it for sale sometime soon.

Our vineyard is farmed by La Prenda, a professional farming company, and our wine is made at Crushpad, a custom crush facility located at Sebastiani Winery in Sonoma. Our old friend Kian is the head winemaker there. He has become a superb winemaker over the years, and he produces consistently fantastic wines.

We have not entered our wine in any competitions, but our last vintage may be worthy. Making good wine is difficult. We have learned that it truly starts in the vineyard with the soil type, weather pattern, varietal, pruning, thinning the vines, and the brix or sugar content at harvest. Our vineyard is only 20 minutes away from our home, and I visit frequently to watch the grapes develop over the growing season.

Chardonnay grapes at the Delgado Family Vineyard.

We continue to focus on pinot noir and chardonnay. Our 2010 pinot is earthy, with hints of cherry and strawberry, and is well balanced because of the abundance of fruit and acidity. It is an unusually bold pinot for the Carneros region, but it has a silky finish that lingers on the palate. The 2010 chardonnay is typical of the Carneros. It is crisp, with good acidity, and it offers light apple, citrus and caramel flavors. The color is golden and clean with beautiful legs. The mid-palate is solid, and the finish is soft, silky and smooth.

Both wines undergo malolactic fermentation and are stirred in the lees (sediment) multiple times, which develops a creamy texture and silky feel to the palate. In addition, the wines are stored in one-year-old oak barrels, which develops depth and complexity and layers the flavors in the wine. Nonetheless, the wines are not over-oaked. In the early days I would use oak chips or extract, and I could always taste the oak, which can easily overpower a wine. The art is to use oak to help develop character, depth and layers.

Winemaking is my out of the office passion. We all need one. It doesn't matter if you enjoy kite flying, fly fishing, travel or golf—you need something to stimulate your mind, just as medicine has done for all of our lives.

My younger brother who loved the ocean died in his forties of an aggressive type of bladder cancer that spread to his kidneys and metastasized. He lived and loved his hobbies. I learned from him that it is never too early to find a passionate hobby that will stimulate your mind and satisfy your spirit.

Cheers to you, brother! ◇

Email: miguel@delgado.com

California Medical Association
Political Action Committee

CALPAC

Fighting for you!

CALPAC needs your help to support candidates and legislators who understand and embrace medicine's agenda.

Our top priorities are:

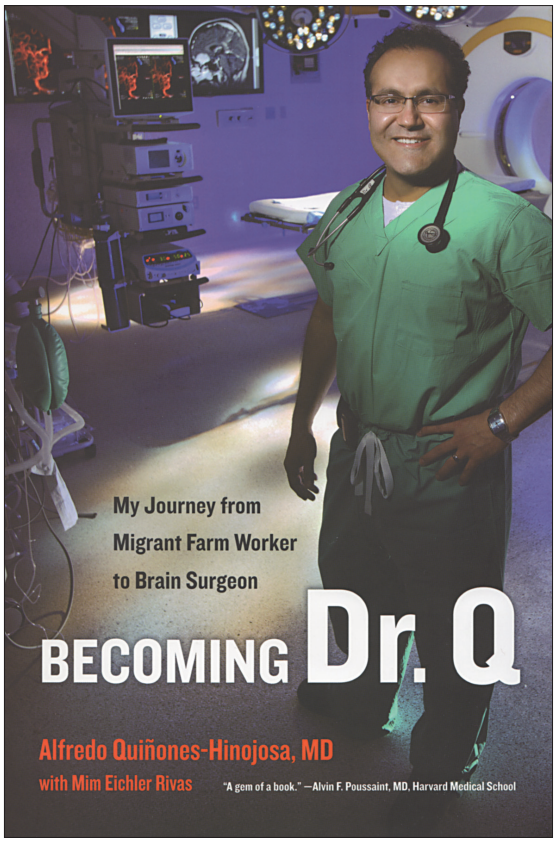
1. Protect MICRA
2. Preserve the ban on the corporate practice of medicine
3. Provide solutions to our physician shortage crisis!

Please visit **www.calpac.org** for more information

BACK THE PAC

Fact-Driven Autobiography

Anne Cummings, MD


My Journey from
Migrant Farm Worker
to Brain Surgeon
BECOMING Dr. Q
Alfredo Quiñones-Hinojosa, MD
with Mim Eichler Rivas
"A gem of a book." —Alvin F. Poussaint, MD, Harvard Medical School

Becoming Dr. Q: My Journey from Migrant Farm Worker to Brain Surgeon, by Alfredo Quinones-Hinojosa, MD, 328 pages, University of California Press.

Don't tell me the moon is shining; show me the glint of light on broken glass.

—Anton Chekhov

I wanted to like this book. Dr. Quinones-Hinojosa has a compelling back story, but his book is a good example of autobiography's pitfalls. Many great writers have lamented the pain taken in telling a first-person narrative, particularly the autobiography. *Becoming Dr. Q* illustrates the dangers of becoming too literal and fact-driven and missing the greater insight of becoming a person and a physician.

One goal of reading literature is to gain a view into another life in order to become more fully human ourselves. In *Moby-Dick,* American literature's most famous first-person narrative, Melville employs stylized language, symbolism and metaphor to explore numerous complex themes, beginning with "Call me Ishmael." Through the journey of the main characters, the concepts of class and social status, good and evil, and the existence of God are all examined, as the main characters speculate upon their personal beliefs and their places in the universe. In contrast, *Becoming Dr. Q* uses little symbolism or metaphor to explore the very same themes. In the telling of Dr. Q's journey from migrant farm worker to brain surgeon, the reader is unfortunately asked to travel unaccompanied by beautiful verse, or even to struggle with difficult concepts. The journey, particularly for a physician reader, is dreary and dull, mostly chronicling events of Dr. Q's life in a straightforward and predictable manner.

"Desperate situations—like the one in which I found myself on the eve of my nineteenth birthday—require desperate choices," writes Dr. Q. "Having made my decision, I couldn't allow any regrets or second thoughts to deter me. Don't look back, I told myself. I had to go forward to find my destiny, crossing the border fence to see where the path on the other side would take me. I had to act boldly, decisively, and immediately. And I had to climb to the top and jump."

As I read the chronicle of a poor, smart young man being guided by luck and some dedicated mentors through the arduous tasks necessary to become a neurosurgeon, I thought of President Obama's autobiography, *Dreams from my Father: A Story of Race and Inheritance.* That book uses complex ideas and metaphor to give insight to Obama's exploration of self; it is not just a set of directions. By comparison, *Becoming Dr. Q* reads more like a Google map than a novel. There is little suspense because the reader knows where the facts are leading.

Dr. Q had hardship, and his path was not straight, but I wanted to hear more from him about the greater life lessons learned. I would have been interested in hearing more about the stories his lay midwife grandmother told, but perhaps he was too young and didn't recall the exact stories.

Halfway through the book, I was surprised to encounter a metaphor, but only the surface emotions are explored

Dr. Cummings, a Greenbrae internist, serves on the MMS Editorial Board.

and left hanging, like the vine in the metaphor: "Just as I was later grateful to my cousin for the kick that got me out of the fields, one day I'd look back and feel the same about the TA's remark, which was more thoughtless and ignorant than mean-spirited. The ugly truth that those words revealed at the time, however, was that I had no defense mechanism, to fend off their impact. Because of who uttered them, they planted seeds of shame in me that took root in my being, soon to become weeds and even twisted, thorny vines, constricting me like a vise and making me want to hide my background. I should have said or done something, and I'm not proud that the blow was landed because of my weakness—my embarrassment about who I was and where I came from."

Compare that to the eloquence of Barack Obama: "The emotions between the races could never be pure; even love was tarnished by the desire to find in the other some element that was missing in ourselves. Whether we sought out our demons or salvation, the other race would always remain just that: menacing, alien, and apart."

The characters of Dr. Q's patients and his wife are one-dimensional and cursory, with predictable personalities and characteristics. Describing his future wife, he writes, "Fortunately, there was someone very close to me who reminded me to ignore those voices: Anna. After months of courtship via the U.S. postal system, we were officially dating at last, although we had a long-distance relationship. After we had gotten to know one another intimately in heartfelt letters, I had finally invited her on a first date—a movie and then a moonlight tour of the Berkeley campus. On our evening stroll, I took her hand in mine for the first time and felt it was the most natural thing in the world to do. I couldn't yet tell her that back in Mexico as a youth I had once received a message in a dream that a woman with green eyes was destined to be my soul mate. Not that I was embarrassed by that story. But speaking those words would have disturbed the magic. Without saying so, I suspect we both knew we would be together from then on." Nothing about what was heartfelt or intimate about their letters or their relationship is ever revealed.

The truly honest and revealing aspects of Dr. Q's story come from his revelations of how naive he was every step along the path to medical school and residency, and how he was guided by the influential mentors to whom he was introduced. The most inane conversations are documented, but whether he learned life lessons or gained insight into his future life as a physician is not explored.

In summary, Dr. Q is a fine neurosurgeon who overcame adversity to get where he is today. His story may be interesting, and I hope it inspires others to share his dreams, but the telling of it makes for a less than compelling read. ◇

Email: annemcummingsmd@mindspring.com

TRACY ZWEIG ASSOCIATES

A REGISTRY & PLACEMENT FIRM

Physicians

Nurse Practitioners ~ Physician Assistants

Locum Tenens ~ Permanent Placement

Voice: 800-919-9141 or 805-641-9141
FAX: 805-641-9143

tzweig@tracyzweig.com
www.tracyzweig.com

NEW MEMBERS

Keith Chamberlin, MD
Anesthesiology
700 Irwin St. #102
San Rafael 94901
460-9924
kjcacm@pacbell.net
Georgetown Univ 1979

Katherine Chastain-Lorber, MD
Psychiatry
1044 Sir Francis Drake Blvd. #3
Kentfield 94904
707-360-1910 Fax 707-360-1942
tamar.rose@comcast.net
UC San Francisco 1978

Mehrdad Razavi, MD
Neurology*
Sleep Medicine*
5 Bon Air Rd. #C116
Larkspur 94939
927-4990 Fax 927-4999
mehrdadrazavi@hotmail.com
Univ Vienna 1994

DocBookMD

. . . A smartphone platform designed by physicians for physicians, that provides an exclusive HIPAA-compliant professional network to connect, communicate and collaborate . . .

now on **Android!**

DocBookMD

FOR IPHONE, IPAD, IPOD TOUCH
AND NOW ANDROID

MMS
MARIN MEDICAL SOCIETY

DocBookMD is supplied at no charge to MMS members thanks to the generous sponsorship of MIEC.

MIEC

Available on the App Store

Available in Android Market

For more details, go to

connect communicate collaborate

DocBookMD.com

Kaiser Permanente San Rafael

Gary Mizono, MD

Note: *Each issue of* Marin Medicine *includes a self-reported update from one local hospital or clinic, on a rotating basis.*

Concept drawing of new emergency department at Kaiser Permanente San Rafael.

Kaiser Permanente San Rafael is beginning construction in late summer of our new emergency department, with completion scheduled for fall 2013. A lot has changed in emergency medicine since we opened our present ED in 1976.

The new ED will be 17,550 square feet, compared to our present size of approximately 6,000 square feet. The design will allow our stroke-certified, STEMI-receiving and EDAT (Emergency Department Approved for Trauma) teams more room to provide patients with the care and service that has produced the highest satisfaction scores in the Kaiser Permanente Northern California Region. The new space will also enhance our ED to hospital bed time, which currently places patients who require admission into a hospital bed in less than one hour, 85% of the time.

Key issues for EDs nationwide include the immediate care of septic and C. diff patients. In response to those concerns, the new ED will feature more negative-pressure and isolation rooms.

As part of our ED's rapid care model, minor injuries will be separated from life-threatening and serious conditions. Patients with lower acuity will be triaged and quickly treated by an ED physician in a private assessment area at the front of the department. Patients with more serious conditions will be brought back into the main ED to receive the appropriate level of care and staffing. Overall wait times for major and minor injuries will be reduced.

With the new ED, Kaiser Permanente will continue its commitment to the local EMS system. Paramedics and EMTs will have a separate workstation and access to a shower inside the ED and in proximity to the emergency vehicle entrance. There will also be an indoor hazmat shower for disasters. The new ED will have security 24/7 to protect our patients, visitors, physicians and staff.

Our commitment to environmental sustainability and green construction practices is demonstrated in the selection of building materials for the new ED, including PVC-free materials in flooring and carpeting, low-VOC paint, low-mercury light fixtures, and many recycled materials.

Patients and their families will appreciate the enlarged lobby, which will have expansive windows to bring in natural light and provide calming views of the surrounding hillsides and greenery. There will also be a play area for young children.

The new ED is part of a larger construction project. Other components include the seismic retrofit of the existing parking structure, as well as the addition of 309 more parking spaces. The parking structure will also have charging stations for electric cars.

Kaiser Permanente San Rafael is a community hospital, and we see both members and non-members in our ED. The expectation is that we will continue to care for the same number of patients, but in an improved and enlarged space. ◇

Dr. Mizono, an otolaryngologist, is physician-in-chief at Kaiser Permanente San Rafael.

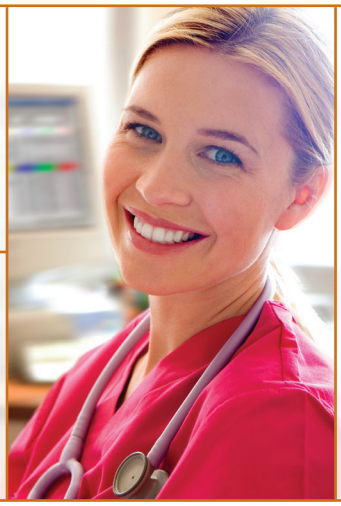
Email: gary.mizono@kp.org

NUMBERS THAT WORK AS HARD AS YOU DO

22,800 CALLERS ASSISTED IN 2011

1 PHONE CALL IS ALL IT TAKES

24/7 PHONE ACCESS TO LIVE EXPERTS



25,000 CREDENTIALING LETTERS ISSUED

What is great service? For NORCAL Mutual insureds, just 1 phone call is all it takes for great service. That means calling during business hours and immediately reaching a live, knowledgeable, friendly expert. After hours, it means promptly receiving a call back from a professional qualified to help with your issue. No automated telephone tango. Questions are answered and issues resolved – quickly. We're on call 24 hours a day, every day of the year. Great service brings you peace of mind.

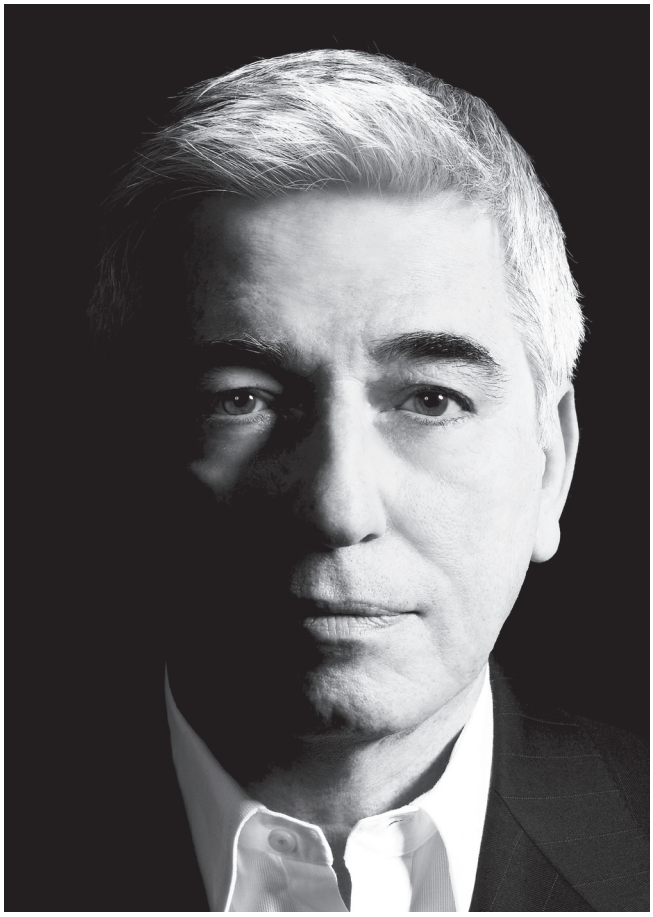
Great service 24/7. Hard-working numbers you can count on.

CALL 1-800-652-1051 · OR VISIT US AT NORCALMUTUAL.COM

Proud to support the Marin Medical Society.

NORCAL Mutual Insurance Company®

Our passion protects your practice



Donald J. Palmisano, MD, JD, FACS
Board of Governors, The Doctors Company
Past President, American Medical Association

We hate lawsuits. We loathe litigation. We help doctors head off claims at the pass. We track new treatments and analyze medical advances. We are the eyes in the back of your head. We make CME easy, free, and online. We do extra homework. We protect good medicine. We are your guardian angels. We are The Doctors Company.

The Doctors Company is devoted to helping doctors avoid potential lawsuits. For us, this starts with patient safety. In fact, we have the largest Department of Patient Safety/Risk Management of any medical malpractice insurer. And, local physician advisory boards across the country. Why do we go this far? Because sometimes the best way to look out for the doctor is to start with the patient. To learn more about our medical professional liability program, call The Doctors Insurance Agency at (415) 506-3030 or (800) 553-9293. You can also visit us at www.doctorsagency.com.

THE DOCTORS COMPANY

www.thedoctors.com